THE VETERINARY JOURNAL
AND
Annals of Comparative Pathology.

APRIL, 1888.

PREVENTIVE INOCULATION FOR CONTAGIOUS PLEURO-PNEUMONIA.

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AMONG the questions which relate to the subject of preventive inoculation for Contagious Pleuro-pneumonia, there are two which deserve especial attention, on account of the controversies which have been carried on respecting them—namely, the transmission of Pleuro-pneumonia and the indications for inoculation.

(1) *Is Pleuro-pneumonia transmitted by Inoculation?*—The importance of this question is evident—in fact, if inoculation created the contagious centres as, for example, Sheep-pox does, that would greatly limit the indications for it.

Now, the data which we possess on this subject do not agree. Thus, as early as 1857, at the twelfth Netherland's Congress of Rural Economy, held at Deventer, it was declared that inoculated animals could not transmit Pleuro-pneumonia to other animals placed in contact with them. M. Jennes, of Utrecht, inoculated half the animals in a stable without any injurious effect to the other animals. On the contrary, M. Reynal declares that a Breton heifer which he inoculated communicated Pleuro-pneumonia to two others which were placed on each side of it, characteristic lesions of that disease being discovered at a *post-mortem* examination.* But this fact has not the force the author attributes to it, because it was not proved that the heifers had not received the germs of the disease before the experiment.†

M. Mollerau, after relating a fact tending to demonstrate that cows not inoculated may safely remain in a stable with inoculated

* "Traité de la Police Sanitaire des Animaux."

† "Recueil de Méd. Vétérinaire," 1879, p. 913. [At the International Veterinary Congress, held at Brussels in 1883, M. Bouley stated that M. Reynal had made a mistake in this case.—ED. V. J.]

animals, even when the operation is followed by terrible gangrenous swelling, mentions another, which proved that, after eighteen days, inoculation transmitted Pleuro-pneumonia to a cow bought in the Canton of Schwitz, where, it is said, the disease is unknown; and he concludes from this that inoculation, although very rarely (about one case in a thousand), may give Pleuro-pneumonia to animals which are exposed to it.*

Chieus de Roubais inoculated, under various conditions, only a portion of the animals kept in a stable, without at any time observing any morbid symptoms among those the proprietor exempted from this precautionary measure.

M. Degive noted in his report on Pleuro-pneumonia, read before the International Congress at Brussels in 1883, a case in which an animal, inoculated by intra-venous injection, showed the interstitial lesions—*i.e.*, the marbled hepatisation peculiar to the disease; and M. Willems asserted that inoculation transmits the malady, but that inoculated animals cannot communicate it to others in contact with them.

Nevertheless, M. Cagny mentioned at the same assembly a fact tending to prove that Pleuro-pneumonia may be transmitted by an inoculated animal, especially if on pastures where animals not inoculated lick those which are, or eat the grass from those places where the ends of the tail have fallen, etc. But M. Lydtin observed that this was not conclusive, unless proved by an autopsy of the inoculated animal.

After this observation M. Cagny said that a *post-mortem* inspection had taken place; that he had been assured that the lungs were perfectly healthy; but as he had not made the examination himself, he acknowledges that this fact could only have a relative value.

These divergent statements gave rise to the experiments which were made in 1884 and 1885 at Pouilly-le-Fort (Seine et Marne), under the auspices of the Societies of Agriculture of Melun and Veterinary Medicine of Paris, by M. Rossignol, veterinary surgeon at Melun. They were made on twenty cows placed in one stable; ten were inoculated and distributed among ten not inoculated. The effects of inoculation were very evident; and even in the experiments made in 1885 a second inoculation was made to prove the first had been really protective. About four months after, the experiments were completed by killing the cows at the Melun abattoir; the autopsies were made with the greatest care by M. Rossignol and his colleagues, but no signs of the disease were discovered in the carcasses of either the inoculated or uninoculated

* "Recueil de Méd. Vétérinaire," 1880, p. 435.

animals; the lungs and pleuræ were, for the most part, absolutely healthy. Tubercular lesions were found in two and echinococcus in one. "This experimental demonstration, repeated twice with the same results, must be considered conclusive, and they ought entirely to dissipate the suspicion of there being any danger of the transmission of Pleuro-pneumonia by inoculated animals" (Rossignol).

In these experiments several of the cows, both inoculated and used as test animals, having calved, their calves were diversely inoculated, and the results tended to establish the fact that immunity is transmitted to the fœtus; "while the criterium inoculations made behind the shoulder—that is, in a dangerous and therefore forbidden part—may produce pulmonary lesions." This conclusion is based on the lesions observed at the autopsy of a calf from a cow which had been inoculated fifteen days before calving, the calf having been inoculated as a test by subcutaneous injection of the virus behind the right shoulder. Rossignol states that they discovered "the existence of purulent Pleurisy on the right side, with thick and very adherent false membranes; the left pleura and lung were intact, but anterior lobe of the right lung was intensely congested, though not friable; and in its tissue there was not that interlobular infiltration usually observed in Pleuro-pneumonia." It will be seen from this description that the conclusion alluded to above is not quite borne out.

M. Rossignol continued his observations and experiments with the virus of Pleuro-pneumonia subjected to different degrees of drying, and he observed on making the autopsy of a cow inoculated with virus dried at 85° Cent., afterward submitted to test inoculation in each flank (hypochondriac region), with pulmonary serosity, and which was sacrificed at the end of two months, that at the base of the right lung, on the external border, there was a lesion apparently chronic, about the size of a hen's egg, "which did not appear to him to have any connection with Pleuro-pneumonia." However, after microscopic examination of the piece of lung by M. Mégnin, M. Rossignol acknowledged the possibility of the transmission of the disease by inoculation, although the majority of veterinarians still considered it doubtful. This precise conclusion rests, however, upon microscopic investigation, which is nothing less than demonstrative, especially when it relates to a pulmonary lesion which a skilful practitioner like M. Rossignol, who was accustomed to the disease, considered could not proceed from that malady. Strictly speaking, it may be admitted that complications of Peritonitis, Pleuritis, Endocarditis, and sometimes of Arthritis, which supervened in all those cases when death resulted from inoculation in the flank, indicate the development of Pleuro-

pneumonia, considering that in the natural evolution of this malady these complications are sometimes met with. But it is necessary to remark that in these cases—the development of the malady from natural contagion—the pulmonary lesions are never absent. These differences may be explained by saying, that in inoculated Pleuro-pneumonia the inflammatory processes which anatomically characterise this malady occur in the tissues of the inoculated region—usually the tail; while in Pleuro-pneumonia by natural contagion, the infection is received by the respiratory tract, and consequently the lungs are first attacked (H. Bouley). This is an ingenious theory, but it requires the sanction of experiment, for except in the case mentioned by M. Bouley in his discourse to the Academy of Médecine in 1881, which tended to demonstrate the direct transmission of Pleuro-pneumonia by breathing the air, we know of no other proving this mode of contagion. It rests, then, only upon an induction which now has many experimental researches against it, proving that air expired does not contain any germs, and hence no conclusions ought to be drawn from it. And again, is it not clear that in affirming that inoculation produces Pleuro-pneumonia, it is not explained why inoculated animals do not transmit this malady, as is positively proved by the experiments of Jennes in Holland and M. Rossignol at Pouilly-le-Fort? But let there be no misunderstanding about the bearing of this, for we do not wish to say that inoculation of Pleuro-pneumonic serosity does not determine the specific effects which confer immunity on the subjects which are the objects of them. We would not compare the action of this operation with that of a revulsive, or of any septic matter whatever, or even again to an anatomical puncture, as has been done (Boens). Pleuro-pneumonia inoculation generally renders animals invulnerable to contagion, as is satisfactorily proved by numberless observations and experiments on this point in France and in other countries. And in achieving this, this operation does not create contagious centres: it is a real vaccination. This is what experience teaches, and we may add that this fact is in nowise contrary or at variance with what is known about preventive inoculation, notably with that which ordinary observation has taught respecting the preservation of man from Small-pox by vaccination. There is no instance recorded of Variola engendered by vaccination; nevertheless it is unquestionable that this virus preserves from Small-pox. Its action, like that of Pleuro-pneumonic serosity, is truly specific and preventive, whatever may be the opinion entertained regarding the vaccine virus, whether considered as attenuated Variola, or as that which appears more probable—a distinct malady, the benefits of which

were revealed by the observing genius of Jenner. In the same way "there does not exist a single fact in which Pleuro-pneumonic inoculation has been the point from which the smallest epizooty has spread" (Butel).

These premises being established, the study of the indications for preventive inoculation naturally follows.

(2) *Indications.*—Preventive inoculation for Pleuro-pneumonia is practised sometimes on healthy animals, "free from all prior contamination" (Butel); sometimes upon suspected animals—that is to say, on those which have been in a stable with sick animals or in contact with such in a pasture, or exposed to contagion in any of the numerous ways by which it can be conveyed. Hence arises the division of this protective operation, as in all similar ones, into Preventive Inoculation and Necessary Inoculation. This distinction, which is fundamental for all preventive inoculations, is here of very great importance, because of the various effects of Pleuro-pneumonic inoculation, according to the cases in which it is employed, and which have given rise to numberless controversies about the efficacy of this practice.

I. Inoculation for Prevention.—It is thus called because used to prevent the appearance of Pleuro-pneumonia in a stable or pasture.

It is indicated in places where a great many cattle are imported, and in which Pleuro-pneumonia permanently prevails. Such is the case, for example, in Holland, where, in the localities of the distilleries, cattle are fattened from all provinces, and are constantly being renewed. On this subject M. Sanson remarks that "the veterinary surgeons in Holland, like those in other countries, discuss the advantages and disadvantages of inoculation; but the feeders themselves do not discuss it, and content themselves with knowing that without inoculation their business would be impossible."* It is the same in the North of France, "where inoculation is considered the safeguard of the industry which consists in fattening cattle upon the residue of the distilleries" (H. Bouley).†

When there exist centres of infection in the neighbourhood of dairies in large towns, preventive inoculation is indicated; the proprietor may have recourse to it at his own peril and risk. It is then a *voluntary* operation carried on at the risk and expense of the interested person, and not of the State. But it may be *obligatory* for all bovine animals in a country; for example, in the Southern Provinces of Holland—the Spoeling districts (distillery

* "Bulletin et Memoires de la Société centrale de Médecine Vétérinaire," 1883, p. 149.

† "Recueil de Médecine Vétérinaire," 1881, p. 203.

districts), where the law of August 26, 1873, which granted an indemnity equal to the value of the healthy animal if it died from inoculation, has been in force since 1878. On this subject M. Wirtz, director of the Veterinary School at Utrecht, communicated the following information to the Congress at Brussels:—"During the period of five years, from 1878 to 1882, in the Spoeling district, 128,308 animals were inoculated—that is to say, 22,000 to 35,000 each year. The losses resulting from inoculation were 0·32 to 1·29 per cent. each year; the total loss 0·90 per cent. These figures are exact; they are based on the declarations of the proprietors, who had every interest in claiming the indemnity." If these figures are compared with those of the mortality of the uninoculated, 26·10 per cent. (Degive), the advantages of precautionary inoculation are clearly seen.

Besides, an experiment was lately made in the Commune of Borgerhout (Belgium), in order to exemplify the value of precautionary inoculation. Pleuro-pneumonia prevailed in this commune for a long time, and a royal decree dated August 23rd, 1885, authorised this experiment, stipulating that an indemnity of 3-4ths of the value of the animals which perished from the effects of inoculation should be given to the proprietor. This decree fixed the maximum indemnity at 450 francs, "and from September 12th, 1885, to March 4th, 1886,"* 414 bovine animals, certified healthy, were inoculated under the care of M. Dèle, of Antwerp. "Four succumbed as a result of the inoculation, and two of them, inoculated September 18th, and October 17th, 1885, were killed on account of having contagious Pleuro-pneumonia.† The final result of this trial, says M. Rossignol, was the disappearance of Pleuro-pneumonia from those stables where inoculation had been carried out.‡

In France, preventive inoculation is entirely optional, and the occasions on which it may be practised, as well as the risks, are left to the judgment and care of those interested. There is, however, a tendency to admit that it may be necessary to make it obligatory in those places where the disease is permanent, as in some of the frontier departments of the Basses-Pyrenées. But it is a very delicate question, and requires most careful examination; we have no intention to discuss it at present.

II. Necessary Inoculation.—This is resorted to when Pleuro-pneumonia exists in a stable or pasturage, the object being the arrest of the disease.

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* "Bulletin du Comité consultatif de Belgique," par M. Wehenkel.

† Ibid.

‡ "Bulletin de la Société de Médecine Vétérinaire pratique. Séance du 11 Mai," p. 82.

It is ordered by Article 9 of the law passed July 24th, 1881, and it applies to all bovine animals which were in the same stable or pasture with the diseased animals.

This operation, then, is, as we see, limited to suspected animals, which, having been exposed to infection, may be contaminated. And if inoculation causes the death of an animal, the proprietor is awarded an indemnity equal to its entire value (Article 17 of the law of 1881). But according to the statistics communicated by Professor Degive, at the Congress of Brussels, the mortality produced by inoculation practised on animals placed in the midst of infection is from 2·71 per cent. That it may be less is shown by the statistics of M. Delamotte, who had only forty deaths in consequence of inoculation in 1,354 animals, which is less than 1 per cent. It is needful to remark that inoculation is likely to cause various accidents, and that it is not always preventive, if the disease already exists in a latent manner in animals at the time when they undergo the operation. Then inoculation seems to accelerate the evolution of the malady, and "so certainly, so surely, that three, four, or five animals affected in a latent manner when inoculated, become ill in thirty or forty days afterwards" (Butel). Therefore, to ensure the success of this necessary inoculation, the veterinary surgeon should be called in at the commencement, and he should diagnose the existence of Pleuro-pneumonia at a glance. Then the sick animal being instantly killed, and inoculation immediately practised, the malady is arrested, "as by the wave of a magic wand" (Butel). However, M. Butel does not infer that this magnificent success is entirely due to the action of inoculation; for, on reflection, he says, "it is easy to see that all these animals were perfectly healthy" at the time of the operation, "because not one of them became ill." Then adds our colleague: "After having killed the first cow, if instead of inoculating, nothing had been done, the result might have been the same, since the slaughter of the animal destroyed the contagious principle, which could alone propagate the malady among the others; preservation of these then proceeds exclusively from the destruction of the diseased beast." But as it is impossible to know positively whether the suspected animals, which may have every appearance of health, "may not conceal the germs of the disease, it is necessary to place them without delay under the shield of Willems (that is to say, resort to necessary inoculation), which in the midst of contagion will preserve them from all danger" (Butel).

This procedure is authorised by Article 9 of the law of July 21st, 1881, which ordains that the mayor ought to order the slaughter of all sick animals, "and the inoculation of all bovine stock in the localities known to be infected by this malady." And

by this expression "localities known to be infected" must be understood, according to the ministerial circular of August 20th, 1882, those which the prefectorial decree making the declaration of infection shall determine the boundaries: it is then only within this boundary that bovine inoculation is prescribed. Thus, for example, if stables belong to several persons and have one common yard, and Pleuro-pneumonia breaks out in one stable, all are declared to be infected. In the same way, if Pleuro-pneumonia is discovered in one animal in a pasture, the declaration of infection will apply to all the animals in that pasture. The inoculation ordered by Article 9 of the law will only be required in districts declared to be infected, as has just been observed (circular alluded to).

As to the delay in the execution of this measure, it ought to be as brief as possible, according to the ministerial circulars of August 20th, 1882, and June 18th, 1883.

Such are the regulations of the sanitary legislation in France, relative to the indications for the carrying out of compulsory inoculation. But it must be observed that at the fourth international Congress of Veterinary Surgeons, held at Brussels in September, 1883, where were assembled practitioners from different countries of Europe in which Pleuro-pneumonia had raged, it was decided that compulsory inoculation ought to be allowed. And on this subject M. Bouley even remarked "that a certain latitude of judgment respecting the adoption of inoculation ought to be left to those on the spot." We have come to this conclusion in our "Précis de Police Sanitaire"; for it appears to us conformable to the spirit of the law of July 21st, 1881, by which the Legislature sought to suppress contagious diseases by relying "on an enlightened and zealous staff to inform the administrative authorities as to the best means for dealing with them";* and besides, the controversies of which inoculation is still the subject, imply, in our opinion, a certain degree of prudence and reserve, in order that the measures should not appear vexatious, but, above all, that they should not expose the public Treasury to grave and heavy charges.

However, the Veterinary Sanitary Congress held in Paris in 1885, decided that the veterinary authority ought to order that all animals attacked with Pleuro-pneumonia should be slaughtered without delay, and those likely to have been infected inoculated. This conclusion seems to have resulted from a passage in M. Butel's report tending to establish the fact that the inoculation of infected animals "has only a slight efficacy, inversely proportionate to the

* "Rapport du Deputé Mouquet."

number of animals attacked in a latent form at the time it is resorted to."

This passage recommending hasty inoculation was criticised by M. C. Leblanc, who set against it the facts noted in his practice in the Department of the Seine. It was thus that in 1882, in fourteen stables, and in 1883 in twenty-three, M. Leblanc saw reason to expect a second case of Pleuro-pneumonia for inoculation; this second case, however, did not occur. There are then, says our colleague, in two years, thirty-seven stables in which inoculation should have had a favourable and startling effect. Evidently these results cannot be overlooked; they merit serious attention. We may mention that we had them in our mind during a mission which was entrusted to us by the Minister of Agriculture, to one of the Departments du Midi, where this malady was reported in 1887.

It is necessary, then, to exercise judgment in these cases of compulsory inoculation, and when the number of the suspected animals is small, three or four, for example, it is advisable to counsel their sale to the butcher, especially in dairies when the public knows of the existence of the malady, as is certain to be the case in small towns. But it must be otherwise if Pleuro-pneumonia breaks out in a large stable of milch cows which cannot be sold to the butcher. In this case, conformably to Article 9 of the law of July 21st, 1881, inoculation ought to be resorted to, if it is certain that the disease is really present.

However, it must not be forgotten that inoculation is not obligatory in Algeria. The decree of November 12th, 1887, relating to the observance of the law of July 21st, 1881, does not insist on this measure. Although the stables in that country generally contain a smaller number of animals than those of the metropolis, every one will agree that if the central administration considered inoculation to have the almost absolute efficacy attributed to it, it would have been made compulsory there as it is in France. May we not conclude that the Colonies, enlightened by the experience of the effects of compulsory inoculation during five years (1882-1887), may be safely left to take care of their own cattle. This is at least our opinion.

ON THE ACTION OF PHYSOSTIGMINE ON THE HORSE.

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Physostigmine.

THIS drug is described by Lauder Brunton as derived from the *Physostigma venenosum*, or Calabar bean, obtained from Western Africa. The bean contains two alkaloids, one known as Eserine,

or Physostigmine, and the other Calabarine. These alkaloids possess different properties: physostigmine contracts the pupil when applied locally to the eye, causes contraction of voluntary and involuntary muscle, and in large doses produces paralysis of respiration, whilst Calabarine produces symptoms of Tetanus, closely allied to those occasioned by strychnine.

Hence we see the necessity, in using a drug of this sort, to work entirely with the pure article. In this respect we have been favoured with absolutely pure specimens of Eserine by Messrs. Burroughs, Wellcome and Co., Snow Hill Buildings, London, and to this firm our best thanks are due for having courteously supplied us not only with this drug, but many others which we have attempted to determine the action of.

It will be remembered that Dieckerhoff, of Berlin, was the first to introduce this drug into veterinary practice. It has been tried by many English practitioners with varying success, and one object of this communication is to attempt to settle its actual therapeutical value, dose, and best mode of administration. In this matter we have been materially assisted by one or two articles published in current veterinary literature by British veterinary surgeons.

The *Preparations* of Eserine which we have used are the sulphate, salicylate, and the latter combined with pilocarpine. The sulphate appeared to produce more colicy pain than the salicylate; whilst the latter, combined with pilocarpine, was found, as shall be shown later on, to be not only more efficient when combined with this drug, but also that a smaller dose was required. This we regard as a rather important and new fact, and one of some practical value.

Dose.—The dose must depend upon the size of the animal, but we may regard one and a half grains of the salicylate as a dose for a medium-sized horse, whilst two grains will probably meet most requirements; both these quantities are effective in their respective cases if combined with three grains of pilocarpine. Smaller doses, such as one grain of Eserine, will in the majority of cases prove useless. We lay particular stress upon this point, as we think it may offer an explanation of the disappointing results obtained by some practitioners.

The *mode of administration* employed by us was hypodermically and intra-tracheal. Of the two, we unhesitatingly prefer the intra-tracheal method to the hypodermic, for the reason that the drug acts more quickly, and in some cases even a smaller dose is required. It is not possible to absolutely state the difference between the doses which should be used hypodermically and intra-tracheal; but we found in one case that one grain of the

drug introduced by the trachea, combined with pilocarpine, had a much greater action than one and a half grain administered hypodermically. It is probable, however, that in the general run of practice no important difference need be made in the dose administered by the trachea and by the skin.

The advantages of intra-tracheal injections are :—(1) It causes less pain than when injected below the skin ; (2) it is more rapidly absorbed ; (3) it acts quicker ; and (4) there is less chance of loss, provided the head be held up for two or three minutes after injection, so as to prevent the fluid dribbling back through the nostrils, which will occur if the head is allowed to become dependent. The amount of fluid which may thus be injected into the trachea is very considerable, and occasions the patient no inconvenience whatever. As the Eserine tabloids are soluble with difficulty in water, this is of great advantage, for we need not hesitate to inject six to eight drachms of fluid, whereas this quantity placed under the skin can only be introduced with difficulty and occasions loss. It is right, however, to say that one or two patients have, on the introduction of the drug into the trachea, coughed slightly. This need occasion no alarm whatever, the only care to be taken being to keep the head up to prevent the drug dribbling back. In one or two cases we have noticed slight trickling of blood from the nostrils immediately after the operation ; this is quite harmless, indicates no damage, and no notice need be taken of it.

We have stated that the drug is soluble with difficulty in water. Its solubility is increased by using warm water, the small tabloid being placed in a two-ounce ointment pot or other suitable vessel, a little water added, the tabloid crushed with a glass rod or penholder, and more water being added, with continuous stirring, until the whole is dissolved. If after this some small particles are still seen undissolved, no notice need be taken of them, provided the needle of the syringe is large enough to allow them to pass, for they will be readily absorbed by the bronchial mucous membrane. The tabloids are soluble in spirit, but the fluid is rendered gelatinous, and we have not employed this method lest the gelatinising should impair its action. The solution in water has a rather pleasant smell and a slightly pale pink tint.

Therapeutic Action.—When the drug is introduced beneath the skin, we may expect it to act in about forty or sixty minutes. When introduced into the trachea, its action may commence in twenty to twenty-five minutes. It is rarely delayed beyond an hour ; whilst beneath the skin we have known it to remain an hour and a half before exhibiting its action.

We will first describe the action of Eserine by itself,

and then the physiological conditions induced by pilocarpine.

The earliest indications we have of the action of the drug are loud intestinal murmurs, passage of flatus, with slight colicy pain; shortly this is followed by evacuation of the contents of the rectum, and the motions then pass at intervals of a few minutes, each becoming gradually softer, more watery, less formed in balls, until we reach the stage when the evacuations are moist and fluid, exactly representing cows' fæces. All this time the abdominal disturbance has become greater, the animal lies down, but seldom rolls, the intestinal murmurs are louder, the passage of flatus almost continuous, straining marked, fæces are voided with great rapidity, often ejected with force, and several ounces of a brown-coloured fluid will at this time accompany each motion. About two to two and a half hours from the time of injection, the effects are commencing to pass off, and during this short time an almost incredible amount of fæces will have been excreted. Details on this point will be given below. Those who have had no previous experience of the drug and the results obtained, will regard it as magical and marvellous.

We may at once state that in Eserine we believe we possess a drug of the very highest value in the treatment of intestinal obstruction and its accompaniments. When we consider the long period which must elapse before those drugs used as purgatives in general practice can possibly act, and that every hour which passes before a free action of the bowels can be obtained is an element of extreme danger, we must, we think, hail with delight a drug which in an hour or so will give us the same results which are at present only procured in from sixteen to twenty-four hours.

We have previously stated that pilocarpine increases the action of Eserine. The results obtained with pilocarpine alone will be detailed in a future paper, but the symptoms it produces when used with Eserine, in addition to those above named, are salivation of more or less intensity, and increased intestinal peristalsis with no increased pain. Salivation is sometimes extreme, and usually commences between three and five minutes after injection; the secretion pours from the mouth, the horse is constantly slobbering and moving the tongue, and large quantities of saliva are swallowed. Salivation need not cause the slightest alarm, it is the natural consequence of using pilocarpine; the quantity of saliva swallowed, and the stimulation of the pancreatic secretion, may in the intestinal canal act most usefully, both mechanically and chemically. It is important to note that Eserine may be administered, even after other purgatives have been given, without destroying or increasing the action of either.

The action of Eserine on the intestinal canal of the horse is due (1) to an increased peristaltic action caused by the influence of the drug on involuntary muscular fibre; and (2) to an increase in the fluids secreted from the mucous membrane of the intestines. We are led to believe that the large bowels are those which are most acted upon by the drug.

We need not, we think, point out to the practitioner the class of case in which this drug should prove of value, but we may be permitted to suggest that, even where volvulus of the intestine is suspected to exist, some good, and certainly no harm, may follow from its use. So violent is the peristalsis produced, that in a simple form of twist we see no reason why reduction may not be effected.

We have not observed the profuse perspiration produced by Eserine, such as has been recorded by other British veterinary writers.

In concluding these notes on Eserine, we append some observations obtained from its practical use which will pretty clearly demonstrate the value of the drug.

A horse received 1½ grains of Eserine subcutaneously; it acted in twenty-five minutes, and produced in the first hour seven evacuations, in the second hour seven, the effect passing off in two hours and ten minutes.

A horse received 1½ grains of Eserine hypodermically, which took twelve minutes to act, producing seven evacuations in the first hour, and then terminating.

Another horse received 1½ grains of salicylate of Eserine hypodermically, producing a free action of the bowels in one hour. This case terminated fatally from Ruptured Stomach, and thus it was demonstrated that Eserine could act upon the large intestines, in spite of the shock to the abdominal nervous system which a Ruptured Stomach causes.

A pony received 1 grain of Eserine hypodermically; three evacuations were produced in fifty minutes, and in eighty minutes from the time of injection eight evacuations had occurred. The case was a fatal one, the cause of obstruction being due to a small diaphragmatic hernia; had the gut not been nipped so tightly, there is reason to believe the increased peristalsis might have withdrawn it.

A horse received a few drops of a solution of Eserine into the conjunctival sac; it shortly produced contraction of the pupil, which lasted fully two days.

A horse received 1½ grains of Eserine by injection into the trachea; it took seventeen minutes to act, and produced in the first hour twelve evacuations, weighing 11 lbs. 13 ozs., and a considerable quantity of flatus. The action then passed off.

A horse received 1 grain of Eserine hypodermically; it took

forty-two minutes to act, and produced only one evacuation in one hour, accompanied by a considerable quantity of flatus.

The same horse received 1 grain of Eserine and 3 grains of pilocarpine by injection into the trachea; it took twenty-one minutes to act. In the first hour, counting from time of injection, it produced fourteen evacuations, weighing 30 lbs. 6 ozs.; in the second hour four evacuations, weighing 7 lbs. 6½ ozs.; and in the third hour two evacuations, weighing 2 lb. 13½ oz.; in three hours a total of 40 lb. 10 oz. of ingesta.

In comparing these two cases, the value of pilocarpine in addition to Eserine is clearly demonstrated.

A horse received 1½ grains of Eserine by the trachea; it acted in forty-one minutes, and produced in the hour five evacuations, during the second hour four evacuations. The weight was unfortunately not obtained, but the quantity of ingesta completely filled a stable bucket. The case was one of most obstinate Constipation, and had received 6 drachms of aloes previously, which ultimately acted at the expiration of the usual time.

Another horse received 1 grain of Eserine with 3 grains of pilocarpine by the trachea, which acted in one and a half hours, producing in two hours and a half from time of injection eight evacuations, weighing 26 lbs., exclusive of loss. The pilocarpine produced its salivating effect in four minutes from the time of injection.

A horse received by the trachea 2 grains of Eserine and 3 grains of pilocarpine, the case being an exceptional one of Intestinal Obstruction. The drug acted in twenty minutes, there being twenty-one evacuations in one and a half hours, which were accompanied by the most intense straining we have ever yet witnessed from Eserine. The relief to the intestinal pain was considerable, and in a short time it entirely ceased. The case terminated fatally a fortnight later, when a disorganised condition of intestine was discovered, such as no drug could ever have beneficially effected.

We have made but few observations on the influence of Eserine on the pulse, respiration, and temperature. We believe we have observed the pulse become fuller under its use. The respirations are generally increased, but this, of course, is due to the amount of abdominal disturbance present; in one case the temperature fell after the evacuation of the bowels; but our observations on all these points are imperfect.

THE RELATIVE THERAPEUTIC VALUE OF SOME ANÆSTHETICS.

BY JAMES MATTHEWS, STUDENT, ROYAL VETERINARY COLLEGE, EDINBURGH.

THE desire to obtain, by the veterinary profession at large, the recognition of the paramountly effectual and safe action of certain anæsthetics as yet almost unknown by, or perhaps I should say, unused by its members, has induced me to lay the following remarks before the readers of the VETERINARY JOURNAL.

While proceeding somewhat arbitrarily, and treating the subject under the two heads of the pharmacology and therapeutics of anæsthetics, I shall premise a few remarks, not altogether inappropriate on this occasion. It must be remembered that although Edinburgh may feel justly proud that it was Simpson who, in 1847, first utilised chloroform in the alleviation of human suffering, it was only very long afterwards, much to the disadvantage, not to say discredit of our art, the disparagement of her sons, and the embarrassment of real progress of veterinary surgery, that a corresponding advance was made in our profession.

This delay is to be accounted for by the insane divorce, against which I would most emphatically protest, which was so long maintained between medical and veterinary science, much to their mutual injury and retarded advancement.

The science and art of medicine and the veterinary science and art are united in one common bond; they are founded on the same basis, the institutes of medicine, branches of the same stem, the physiological; and sprung from the same great trunk, the biological or science of life.

The various agents employed to induce a state of anæsthesia may be conveniently considered as (*a*) Local and (*b*) General, according as their action is confined to a limited area, annihilating sensation in peripheral nerves, or as it becomes general, attacking the great nerve centres, and thus abolishing sensation throughout the body.

(*a*) *Local Anæsthetics* are few, and may be comprised as extreme cold, ice, ether spray, carbolic acid, cocaine, and iodoform.

Each of these suspends sensibility in virtue of a direct sedative action on the nerves themselves, and I would more particularly direct attention to the puissant utility of carbolic acid and iodoform as local anæsthetics, which I consider deserve more extensive application in veterinary surgery. The simple painting on of pure carbolic acid, for example, in the case of opening an abscess, would not only anæsthetize but aseptisize, and this would be of especial advantage in evacuating matter near contaminating centres, as the anus, etc. The value of powdered iodoform as a local

anæsthetic is very great indeed in the relief of pain in irritable ulcers and sores, and the simplicity of its application, the invariable comfort obtained, along with its excellence as an antiseptic and deodorant, warrant for it a much more extensive employment. I therefore venture to advocate the use of powdered iodoform as a local anæsthetic to all painful discharging surfaces ; and, moreover, its value is much enhanced, as it is a stimulant, rapidly inducing healthy action in indolent wounds. Of late cocaine has found favour in the eyes of a number of practitioners, but my experience is that it is uncertain in its action.

(*b*) *General Anæsthetics.*—General anæsthetics, however, are very numerous, and Dr. Ward Richardson, in a recent synopsis, includes no fewer than thirty-three different bodies in this category.

I shall confine my remarks to three of these, however, viz., chloroform, ether, and alcohol, and mixtures of these three. Now, the state of unconsciousness induced by these anæsthetics is one in which voluntary motion and sensation are suspended, and the circulatory and respiratory centres are more or less untouched, their functions being duly carried on ; and the ideal anæsthetic would be one which, while throwing the cerebral hemispheres, that is, consciousness and sensation, and the basal ganglia and spinal chord, that is to say, voluntary and reflex motion, out of gear, would leave the medulla and its vital centres, the cardiac, vasomotor, and respiratory, untouched.

Neither chloroform nor ether is judged by this standard a perfect ideal anæsthetic, but of the two ether comes nearer this idealism than chloroform. Their physiological actions might be thus contrasted—chloroform depresses the heart, ether stimulates it ; chloroform paralyses the vasomotor centre in the medulla oblongata, ether has no such dangerous action. Chloroform therefore embarrasses much the respiratory function—a function largely maintained through a proper working of the vasomotor mechanism ; this is not so with ether. Ether is therefore the safer, and under proper management the more effectual anæsthetic.

But it is to two mixtures of these that I would particularly draw attention. These are what are called the Vienna and the A. C. E. mixtures. The Vienna mixture consists of ether and chloroform in the proportion of eight to one. It was first used in Vienna, and so effectual was it found that a law was even passed that no other should be employed in the hospitals there in medical practice. I am not aware that it has yet found favour in veterinary work, but I now wish to bring it prominently before the notice of the profession. The other mixture, the A. C. E., consists of alcohol, chloroform, and ether in varying proportions—a common ratio in medical practice being four parts of ether and two parts each of

alcohol and chloroform. This is regular in its action, effective, and altogether a good combination; and I may mention that so innocuous has it been found that no death has yet been recorded from its use.

And, in conclusion, I would only reiterate that in a mixture such as this a near approach to perfection is attained, inasmuch as it combines the good effects of each constituent while minimising the evils inseparable from all; that is to say, anæsthesia is established, but the vital functions of respiration and circulation are not interfered with more than is compatible with speedy restoration on the withdrawal of the anæsthetic.

I therefore wish to advocate not only a better recognition of the claims of these local anæsthetics for use in veterinary practice, but the trial of such a mixture as I have now indicated as infinitely preferable to any single one, both as perfectly safe and certainly efficacious.

TREATMENT OF IMPACTION OF THE COLON IN THE HORSE.

BY THOMAS W. CAVE, M.R.C.V.S., NOTTINGHAM.

WHILE a student at the Royal Veterinary College, it was my lot to read a paper before the Students' Veterinary Medical Association on "The Stomachs of the Ox and their Diseases."

In that paper I strongly opposed the administration of large and repeated doses of purgative medicines in cases of impaction of the rumen and omasum. In all works I had read treating upon these affections, the first thing recommended was the administration of purgatives; and my opposition to this course of treatment was based not on my own short experience, but upon the long practical experience of my father, who had repeatedly impressed upon me the futility of giving purgatives to relieve impaction of the stomachs in the ox. His advice was to give no solid food of any kind, and endeavour to induce the animal to ruminate by stimulating the muscular action of the stomachs. This advice was proved to be valuable by the satisfactory results of such treatment.

Since leaving college I have made a special study of the diseases of the bowels of the horse, and have come to the conclusion that the administration of purgatives to horses suffering from affections of the bowels is unwise and likely to produce serious results, especially in those cases so commonly met with, of impaction of the colon.

During the past eight years, a very large number of these cases has come under the treatment of my father and myself, but during

these years not one single drachm of aloes has been given, and every case of this kind has recovered.

This satisfactory result is, I firmly believe, mainly due to our refusal to administer purgatives and the method of treatment we have adopted.

On first seeing the case, which has probably exhibited symptoms of abdominal pain for several hours, we give an ordinary anodyne draught, or a hypodermic injection of morphia and atropine. In some cases the pain ceases and does not return, although no action of the bowels may be obtained for several days. In order to assist the action of the bowels, frequent enemas of warm water are given, and are persisted in until the bowels act naturally.

Other cases occur of a far more severe character, the pain being violent and more persistent, the number of the pulse and respirations much increased, with an anxious countenance, violent sweating, and ceaseless movements, the patient never remaining in one position for many minutes together—certain indications of the severity of the attack, and the probability that the mucous membrane of the impacted bowel is inflamed.

In these cases we do not give the ordinary anodyne which contains a stimulant, but rely upon repeated doses of opium by mouth, or morphia and atropine hypodermically, with frequent enemas of warm water.

The pain may last for many hours without any signs of relief, and we now need our greatest firmness to resist the frequent demands of the owner for the administration of purgative medicine. A strong blister is applied to the belly and the former treatment is continued, until at length the pain subsides, the coat dries, the countenance becomes cheerful, and the patient begins to look about the box for food.

There is still no action of the bowels, but the owner is satisfied at seeing his animal free from pain, though still he "wishes you could get a passage through him." He is assured that that is only a matter of time, and that he must have patience, the great object of the treatment being attained; for the animal is free from pain.

After the pain has ceased for a few hours, a little sloppy and warm bran mash is given at intervals, this being the only food allowed until the bowels have acted, when we allow a little scalded hay.

The bowels may obstinately refuse to act for days—in one case, I remember, for ten days; but the enemas are persevered with, and at last the water, which has until now been ejected as clean as when injected, becomes stained, and shortly afterwards a small quantity of hardened fæces will be passed, to be followed before

long by repeated natural evacuations of the bowels. The case now requires no further treatment, except careful dieting.

The majority of these cases are treated in our infirmary, and therefore are continually under observation; the box reserved for them is thickly bedded with sawdust; so that the patient cannot obtain a particle of food except what is given to him.

I claim for this method of treatment that it is successful, and that nothing is done which can aggravate the severity of the attack, the whole object being to get rid of the pain; when that is achieved, it is certain that the rest will follow in due course.

I cannot but think that the administration of aloes in such cases is likely to cause rupture of the bowels at the seat of the obstruction, by increasing the peristaltic action of the small bowels, and so forcing their contents into the already distended colon.

The same may be said of the administration of physostigmine, which increases the muscular action of the bowels, and tends to force the ingesta more closely into the distended gut. Of course, the bowel may bear the strain, and immediate relief result; but in a large number of cases I should expect to get a certain proportion of deaths from ruptured bowel as the result of the treatment, and I am strongly of the opinion that such cases would have recovered if less violent measures had been adopted.

It is certain that purgatives increase the pain, even if no rupture of the bowel takes place, and probably, too, will increase its inflamed condition.

The plan of treatment I have sketched out may be slower in obtaining the desired results, but it is sure and safe. The administration of sedatives and antispasmodics, whether by mouth or hypodermically, has a twofold effect—it allays the pain and quiets the bowel, relaxing muscular contractions, and giving the overworked parts a much-needed rest.

We know that in "choking," the œsophagus grips the offending mass, and holds it firmly; is it not probable that the bowel also holds the mass of ingesta by the contraction of its circular muscular fibres? And this muscular contraction is overcome by the action of the sedatives, and the bowel is relaxed. At the same time, the enemas injected through a force-pump loosen the hardened mass of ingesta and gradually soften it; so that when the recovered bowel commences to gently force the ingesta backwards, the formerly hard and compact mass is now in a condition to pass through the narrower portion of bowel immediately behind the situation of the impaction, and a natural evacuation results.

The warm water of the enemas also acts beneficially as a local anodyne, helping to relieve the pain, and when ejected often carries

away quantities of accumulated gases which have aggravated the symptoms.

In all such cases as I have described, purgatives are, in my opinion, dangerous; indeed, I have been induced to give up the use of aloes in *all* cases of abdominal pain, believing that the object of the treatment adopted should be to relieve the pain; and this is best done by the exhibition of sedatives, which also control and quieten the action of the bowels. The hasty administration of aloes has probably caused the death of many horses suffering from Enteritis—cases which might have recovered if the bowels had been kept quiet.

I have also often marked with surprise the great length of time many necessarily fatal cases of volvulus, intersusception, ruptured stomach, etc., have lived under this method of treatment, and how greatly the sufferings of the doomed animals have been alleviated by the continued exhibition of sedatives.

It is a common practice to give aloes in cases of spasmodic colic: cases which might easily be relieved by the exhibition of a simple anodyne draught, and be ready for work as soon as the pain subsides, while, if aloes has been administered, a rest of several days must be allowed.

A letter which appeared in the *Lancet* for February 18th, 1888, very clearly shows the value of the system of treatment I advocate, as compared with the purgative system; and for this reason I venture to give extracts from it, for the benefit of those who may not have had the opportunity of reading it.

"*Case of Foreign Bodies in the Intestine.* In the January number of the *Revue Medico-Pharmaceutique*, the following case is recorded:—

"In November, 1887, a man consulted Dr. Siotis, on account of pain in the epigastrium due to the singular fact of his having swallowed fifteen Turkish gold coins. The day after the accident he took a strong dose of castor oil, which purged well, but failed to bring away any of the coins. Two more purgative doses only weakened him and increased his pain so much that he consulted Dr. Siotis. The doctor ordered rest, and pills containing extract of opium and extract of belladonna, one every hour. Next day three coins were passed with the fæces. On the following day four more coins were evacuated.

"The order was now, castor and croton oils to be taken. Active purgation followed, but no coins passed, and the pain increased so that the opium and belladonna pills were resumed. Next day two pieces were passed, but pain still remained; the pills were continued, and eventually all the coins were evacuated and the patient reported himself perfectly well."

Dr. Thorowgood, who reported the case in the *Lancet*, points out the uselessness of active purgation, and the satisfactory results that followed the administration of opium and belladonna; and observes that some knowledge may be gained from the case, of the way the intestines move and act under the influence of strong purgatives on the one hand, and antispasmodics on the other, and so we may learn something to help us in the treatment of some forms of constipation and obstructed bowel.

In conclusion, let me say that this case shows so marked a contrast between the two methods of treatment, and so clearly points out the best way to obtain the desired results, that I cannot do better than leave it to tell its own tale, and carry conviction to the minds of those who may not feel inclined to fall in with the views I have advocated in this paper.

PURPURA HÆMORRHAGICA PROBABLY CAUSED BY "WORMS."

BY FRANK W. SOMERS, M.R.C.V.S., LEEDS.

On January 30th I was called in by a large coach proprietor to examine an aged brown horse which had suddenly been taken ill. On visiting this animal, I found the case to be one of Purpura Hæmorrhagica. The drainage of the stable was good, and the place was well ventilated. I at once had the horse removed and placed in a loose-box with an abundant supply of fresh air, and although the symptoms were well marked he appeared very bright, notwithstanding his being wretchedly poor in condition. Temperature, 102°. I prescribed the usual treatment, and Pot. chlor. ʒj twice a day, in order to prevent the occurrence of further extravasations and congestions. Good food was regularly supplied, although the appetite was very indifferent.

On Jan. 31st the animal was not so well, the swellings having extended from the chest and abdomen towards the head, and the breathing had become more difficult in consequence.

On Feb. 1st and 2nd he seemed to be getting weaker, and although there was no change in the temperature of the body, the breathing was becoming so difficult that I had a consultation with the owner. Seeing that the animal was very old and so poor and weak, the owner suggested destruction, which was undoubtedly the wisest course to take, seeing that the patient could scarcely have recovered, and the emaciation was now so extreme.

On Feb. 3rd the horse was destroyed, and I made a *post-mortem* examination, when I found the usual *p.-m.* appearances of this disease with a very unusual quantity of "worms"—in fact, I

never heard of a case where so many worms were found in one animal. From the stomach down to the end of the intestines these worms were in great quantities, and within the small intestines they seemed to be one living mass. They were the "Ascaris megalocephala," known amongst veterinarians as "lumbrici." Their quantity was so great, that they would have filled two or three buckets. This would account for the condition of the animal, which I was told had always been very poor. The worms seemed to be coiled together all along intestines, and the small intestines were even occluded by them.

I am aware that some celebrated veterinary works say that Purpura Hæmorrhagica is only caused by the absorption of some effete on septic materials *extrinsic* to the body; but in this unusual case, if the disease was not caused by some decomposing materials from these worms *intrinsic* to the body, then their presence had produced a morbid condition which was favourable to the development of "purpura."

VACCINATION OF PUPPIES FOR THE PREVENTION OF DISTEMPER.

BY A. W. BRIGGS, M.R.C.V.S., HALIFAX.

Some few weeks ago I was consulted as to the advisability of vaccinating a mastiff puppy as a preventive of distemper.

I at once confessed my ignorance of any such operation, and being anxious to investigate the matter, I was referred to Mr. Ambler, of Luddenden—a gentleman whom I knew to be of the highest integrity of purpose, and a keen observer of things appertaining to the welfare of domesticated animals. I may mention, *en passant*, that Mr. Ambler was one of those who gave "ensilage" a consistent trial, with a view to ascertaining its value as a food-stuff for cattle, and the results of his experiments were, at the time, published in some of the leading agricultural journals.

I sought out Mr. Ambler, and found, as I suspected, that pure vaccine was the material inoculated. I had no difficulty in inducing him to place upon paper his experience of the operation, and he consented to the publication in the Veterinary Journal of his letter to me, which I enclose herewith.

At the time of this inquiry, I had a M.R.C.V.S. assisting me in my practice, who had performed the operation many times whilst with his previous employer, but who could give me no information as to the material inoculated, further than the name of the firm of London chemists who supplied the "points" used by him. I wrote to the representative of this firm, who, in reply, stated: "I have been in the habit of supplying vaccine in tubes and upon

points, for many years, to veterinary surgeons for vaccinating puppies as a preventive of distemper, and its results have for the most part proved effectual, though I am quite at a loss to give the why or the wherefore ? "

Now, after stating these few facts as briefly as possible, I would like to ask one or two questions that present themselves to my mind, viz :

Firstly :—Is there any relation between either variola or vaccinia on the one hand, and distemper (so-called) of the dog on the other hand ?

Secondly :—If there is no such relation, are we justified in attributing the reported immunity from disease to the operation ?

Or, Thirdly :—Are not the supposed results mere matters of coincidence ?

Personally, and with all due deference to my friends, I cannot refrain from stating that I received the above information *cum grano salis*, but if any of the numerous readers of the JOURNAL can give me through its medium any further information I feel sure I shall not be the only practitioner benefitted thereby.

DEAR SIR,—Referring to the conversation I had with you a little while ago about vaccinating my young dogs for some years back as a preventive against distemper, I have pleasure in stating that previous to operating on them I could scarcely rear a single pup. I lost mastiffs, pointers, and setters; but since I commenced vaccinating I have not lost one. I would not wish you to infer that they have all been entirely free from distemper, but it only appeared in a very mild form.

I may also say that two or three weeks ago whilst in the West of England (at Gloucester) I met a gentleman at the same hotel I was staying at, whose experience about rearing puppies agreed with mine. He told me that he had been in the habit of breeding very high-bred animals for show purposes (and I suppose the better bred the more difficult to rear), and that he lost so many in distemper that he began to despair, and gave up breeding altogether for a time ; but having heard of the vaccinating process he adopted it and tried again, and has since been very successful indeed, rearing three out of every four on an average. Yours, etc.,

JAMES AMBLER.

Editorial.

THE EXTINCTION OF CONTAGIOUS PLEURO-PNEUMONIA.

At last the Government has had the courage and wisdom to proclaim measures with regard to combating the Contagious Pleuro-pneumonia of cattle, which it might have resorted to with great advantage to the public years ago. In what is designated "The Pleuro-pneumonia Slaughter Order of 1888," passed on March 6th, the Privy Council orders the destruction of all cattle which have been exposed to infection through contact or cohabitation—or, in other words, which are, or have been, "in the same field, shed, or other place, or in the same herd"—with cattle suffering from the disease, within ten days after such contact has been ascertained, "or within such further period as the Privy Council may in any case direct." A Local Authority, acting on the certificate of the Inspector of the Privy Council, shall cause such cattle to be slaughtered; and until this step is taken, they are to be kept in a shed or other place approved by the Privy Council, only to be moved therefrom for immediate slaughter, no other cattle being admitted to these places during such detention. Licenses are necessary for moving cattle for slaughter, such licenses being available only for twelve hours, and they are to specify the slaughter houses, while movement is to be made under the direction and in charge of an inspector or other officer of the Local Authority, who is to enforce and superintend their immediate slaughter.

Compensation for slaughtered cattle is to be paid out of the local rate, the amount to be the value of the animal immediately before it was killed, though it is not to exceed forty pounds in any case—exception being made with regard to animals suspected to be affected with Pleuro-pneumonia.

Disinfection is also to be carried out, and at the expense of the Local Authority.

These measures are to be carried out in the United Kingdom, and it will be interesting to watch their operation. The protective effects of inoculation are not mentioned, and against such wholesale destruction there are certain to be strong protests. Certainly, the centres of infection are comparatively few, and if the Slaughter Order is carried out promptly and vigorously the malady should soon be extinguished. But there is great danger that outbreaks will be concealed and the provisions of the Order evaded. We may expect an agitation in favour of imperial instead of local compensation; but there can be no doubt that if compensation were granted by Government, grave abuses—abuses which are not likely to occur when the local rate is the source—would be far from uncommon.

We suppose the carcases of the slaughtered cattle will be utilised as human food, and there can be no reason why they should not, if found healthy; this will diminish considerably the cost of stamping out the scourge.

Of the necessity for issuing this Order there can be no doubt whatever; it has been painfully evident and strongly insisted upon for

years, and it is a matter for surprise and regret that it was not issued long ago.

Once the disease is extinguished, all that will be needed will be vigilance to keep it out of these islands, a task which should not be difficult. In the meantime, a heavy, and by no means an enviable duty, is imposed upon the members of the veterinary profession in carrying out the Slaughter Order, and upon them largely rests its success.

EXTRACTS FROM A PAPER ON DIPHTHERIA IN POULTRY.

BY MAG. A. V. KRAGEWSKI, CHERSON, RUSSIA.*

THE Diphtheria of poultry and other domestic birds is an infectious epizootic disease, which, when once it has obtained a footing in the poultry-yard, remains for a long time (months, and, according to Professor Zürn, years), owing to its slow course. The malady is spread by a contagium which is to be found in the excretions of the diseased. It has an incubative period of five to seventeen days, according to Löffler, but the author says four to ten days.

Birds are known to suffer from several varieties of disease of the mucous membranes: (1) Common Catarrh (*Coryza avium*); (2) Gregarinosis, a malady due to the presence of psorospermes; (3) Diphtheritis or Croupous Diphtheria.

The inoculability of Diphtheria has been denied by Siedamgrotzky and Perroncito, but Nicate, Cornevin, Princker, Gerhardt, and Löffler assert that not only poultry, but rabbits may be artificially infected. The author's positive results lead him to support the views of the latter.

The etiological question of Diphtheritis in human medicine has not yet been exhaustively answered up to recent times. Although observations by many skilled investigators are not wanting, they have agreed so little, and have been attacked so much, that the question of contagium [as between animals and man?] can only be surmised from the great similarity in the symptoms of the diseases; but an important advance has been made by the discoveries of Oertel and Klebs of the bacterial nature of the malady.

A similarity in the symptoms of poultry and human Diphtheria, combined with a simultaneous outbreak in both subjects, witnessed by Löffler, caused him to submit the organs and excretions of some pigeons which had succumbed, to a very searching examination. He was able to detect, isolate, and cultivate a bacillus closely resembling that found in Rabbit Septicæmia.

From pure cultivations he succeeded in producing fatal Diphtheria in healthy pigeons, but when fowls, sparrows, and other small birds were inoculated, the results were not always satisfactory.

The inoculation of rabbits and mice produced in five to seven days a typical, regular infection.

Gerhardt, who watched the Diphtheria epidemic in Nesselhausen (Baden), found it was caused by an epizootic amongst pigeons, and he asserts that the avian disease is communicable to man, and produces a malady very similar to ordinary human Diphtheria, and can only be distinguished by the benign course it runs. Boing, Fleming, Smith, Zürn, and others maintain that the malady is communicable from man to animals, and *vice-versa*, and that the human patients thus infected show the usual symptoms of ordinary Diphtheria; and by his own observations the author is led to the conclusion that all cases of Diphtheria in birds are part of a general epidemic.

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* Translated by F. Raymond, A.V.D.

CONTAGIOUS PLEURO-PNEUMONIA.

On March 19th, at the Privy Council Office, Viscount Cranbrook (the Lord President) and the Marquis of Lothian (Secretary of State for Scotland), who were accompanied by Mr. C. Lennox Peel, C.B., Clerk to the Council, and Professor G. T. Brown, of the Agricultural Department, received a deputation from local authorities of Scotland in reference to a proposed inquiry into the causes and treatment of Pleuro-Pneumonia. The deputation, which represented twenty-nine local authorities, was accompanied by the following Members of Parliament:—Colonel J. Hozier, Mr. Craig Sellar, the Hon. G. R. Vernon, Mr. R. W. Duff, the Hon. R. Preston Bruce, Mr. Barclay, Mr. M'Lagan, Sir Archibald Campbell, Mr. Barbour, Mr. H. T. Anstruther, Mr. Mark Stewart, and others.

Colonel Hozier, Convener of Lanarkshire, said that for several years past there had been a constant increase in the number of outbreaks of Pleuro-pneumonia and in the number of cattle affected. In 1884 there were 55 outbreaks of Pleuro-pneumonia in Scotland; in 1885, 60; in 1886, 94; and in 1887, 339. The compensation paid in respect of slaughtering in 1884 was £5,581; in 1885, £10,391; in 1886, £15,131; and in 1887, £34,593; and altogether a sum of £65,697 had been paid in compensation during the last four years. The recent Order in Council might possibly tend to do some good, but it contributed very considerably to increased expenditure for compensation. It was this enormous expenditure, combined with the failure of the past treatment of the disease, that had led them to feel that there was absolute necessity for inquiry. There was a strong feeling in favour of inoculation. The deputation submitted the following questions to the Government for inquiry:—(1) How the disease is propagated, and how long it may remain latent; (2) how far the disease may be carried, and what may be considered an infected area; (3) whether infection can be resident in places such as byres, trucks, boats, or pens which diseased animals have recently occupied; (4) at what stage the disease begins to be infectious, and whether it is able to be detected before that time; (5) whether inoculation gives permanent protection against the disease, or how long it may be capable of doing so; and (6) whether an animal which has been inoculated can, six weeks or more thereafter, propagate the disease. The deputation suggested that the proposed investigation should be a Royal Commission.

Dr. Aitken also spoke in favour of inoculation.

Viscount Cranbrook, in reply, said the Government were quite aware of the extraordinary spread of Pleuro-pneumonia in Scotland. In the return which had been handed in by the deputation it was simply stated that inoculation had been of use in preventing the spread of disease. In 1883 there were 16 outbreaks aud 47 cattle attacked; in 1884, 24 outbreaks and 76 attacked; in 1885, 15 outbreaks and 60 attacked; in 1886, 58 outbreaks and 227 attacked; and in 1887, 64 outbreaks and 233 attacked. Therefore it would appear upon the returns that the practice in Edinburgh had not tended to decrease either the number of outbreaks or the number of cattle attacked. He admitted that there was a case for inquiry. Though he could not promise them a Royal Commission, he would promise that there should be a very careful inquiry. If there should be an inquiry, the Order which the Privy Council had recently issued would remain in force. Ireland was now in harmony with them, and was bent, if possible, on eradicating the disease. If the order proved effective in Ireland in eradicating the disease, it would tell them something in respect of the steps which should be taken in Scotland and England. They had been so successful with respect to Foot-and-Mouth Disease and Cattle Disease that they ought not to give up hope at once of dealing satisfactorily with Pleuro-pneumonia. He believed there

had been no case in England of Foot-and-Mouth Disease for more than two years; and they might now hope that, unless it was brought in from abroad, that disease was eradicated.

Colonel HOZIER then addressed the Ministers upon the proposal that owners of cattle should be compelled to report all cattle which had died, or which they had slaughtered on account of the disease. He said there were cases of concealment of infection on the part of owners, arising sometimes from ignorance, but very often from the selfish motives of unprincipled persons.

Viscount CRANBROOK, in reply, said that with regard to reporting all deaths it would be almost impossible.

Mr. MARK STEWART, M.P., suggested that the veterinary surgeons should be compelled to report all such deaths at once.

Viscount CRANBROOK thought that would not meet the case, because if a farmer considered that one of his animals was failing, and that he could make something of it with the butcher, he was not likely to call in the veterinary surgeon.

ROYAL VETERINARY COLLEGE.

WE have reason to believe that Professor Brown, C.B., has been appointed Principal of the Royal Veterinary College. Professor Axe becomes lecturer on Horse Pathology, and resides in the College; while Professor Penberthy takes over the duties formerly allotted to Professor Axe.

PRESENTATION AT COURT.

AT the Levée held on March 7th, at St. James's Palace, Professor George Brown, C.B., was presented by the Lord President of the Privy Council, on the occasion of his having been made a C.B. We believe this is the first time a civilian member of the profession has been presented at Court as such—a notable circumstance. Army veterinary surgeons have been presented for nearly five years, being eligible irrespective of any special occasion.

A GRACEFUL COMPLIMENT TO THE ENGLISH VETERINARY PROFESSION.

THE *Morning Post*, in its issue of February 29th, alludes to the election of Dr. Fleming, Principal Veterinary Surgeon of the Army, as a Foreign Member of the *Société National D'Agriculture* of France, and in stating that the Society accords the same kind of recognition to agriculture that the French Academy does to literature and science, designates the election as "a graceful compliment to the English veterinary profession." Our readers will perhaps be better able to appreciate the compliment, if we glance at the history and constitution of the Society.

It was established by a degree of the Council of State of Louis XV. in 1761, by the title of *Société Royale d'Agriculture de la Generalitie de Paris.* By an ordinance of Louis XVI. in 1788, it was designated the *Société Royale et Centrale* for the entire kingdom, and regulations for its organisation were framed. Under this new form it remained until the suppression of all the learned societies during the revolution in 1793, when it disappeared. On the return of comparative tranquillity, it was re-constructed in 1798, and named the *Société libre d'Agriculture du Department de la Seine.* The Emperor Napoleon I. in 1804, authorised it to assume the title of *Société Imperiale d'Agriculture*, and placed it somewhat on the basis of 1788; and in 1815,

Louis XVIII. empowered it to adopt again the title and privileges conferred upon it in that year. In 1848, the Society, by decree, was named *Nationale and Centrale*, and it was divided into sections, its members being limited to fifty-two, and their mode of election fixed. A decree of Napoleon III. in 1853, again changed its title to *Imperiale et Centrale Société*, and another of 1860 named it the *Société Imperiale et Centrale d'Agriculture de France;* while decrees of the President of the Republic in 1878, 1879, and 1880 completed the organisation of the Society, which then received the title it now bears, and provided regulations as to the privileges and duties, as well as the mode of election, of its national and foreign members, its associates and correspondents. The number of members is very limited (fifty-two national or titular members, and fifteen foreign members), as is also that of the associates (forty national, no foreign) and correspondents (150 for France, Algeria, and the French Colonies, and fifty foreign). They are divided into two classes; the first is that of Agricultural Sciences *(Sciences agricole)*, which comprises five sections. The first of these deals with what is called the *grande culture*, and has six national associates, two foreign members, and twenty-five national correspondents; the second section, dealing with special culture, has four national associates, one foreign member, and twenty national and seven foreign correspondents; section three, to which is allotted woods and forests, has three national associates, one foreign member, and twenty national and seven foreign correspondents; the fourth section occupies itself with animal economy, and consists of five national and two foreign members, and twenty-five national and eight foreign correspondents; while the fifth section, or economical, is devoted to statistics and agricultural legislation, and has three national and one foreign member, and fifteen national and five foreign correspondents. The second class includes the sciences applicable to agriculture, and is divided into three sections; the first of these deals with the agricultural physico-chemical sciences, and is allotted three national and one foreign member, and fifteen national and five foreign correspondents; section two engages itself in agricultural natural history, and is composed like the last, as is also the third section, which deals with agricultural mechanics and irrigation. There are also two special sections *(sections hors cadre)*, one for national, the other for foreign members.

Among the national members are the most famous scientists of France, in the animal economy section being the two well-known veterinary authorities—Chauveau and Goubaux. The foreign members in this section only number two—Dr. Willems of Hasselt, Belgium, elected in 1882, and Dr. Fleming, just elected. The English representatives are very few; besides the last-named, the Prince of Wales and Sir Richard Owen (the anatomist) are in the special section of foreign members. Sir James A. Caird is in that of statistics and agricultural legislation, Sir James B. Lawes in that of the agricultural physico-chemical sciences. Among the thirty-six foreign correspondents there are only two English names, that of Professor Wilson, Edinburgh University, who is in the statistical section, and J. Miles Berkeley, who is in the natural history section. There are only two foreign correspondents in the animal economy section. The election of foreign members appears to be very infrequent. Of the thirteen now on the list four were elected in 1856, one in 1877, three in 1881, one in 1882, two in 1883, one in 1885, and one in 1888.

It may be remarked that the names of the national and foreign members and national associates must be submitted for the approval of the President of the Republic before their election can be confirmed; those of correspondents only require the approbation of the Minister of Agriculture.

The mission of the Society is not only to enlighten the French Government on all questions pertaining to rural economy, but also to bestow rewards

on the authors of useful discoveries, or works which may aid the progress of agriculture. Looking down the list of members since the Society was established in 1761, we notice among the celebrities of science many names of French veterinarians, which the history of our profession conspicuously favours, and among these are Bourgelat, founder of modern veterinary science, Chabert, Delafond, Flandrin, Garsault, Bouley, Chauveau, Goubaux, Huzard, Magne, Renault, and Reynal.

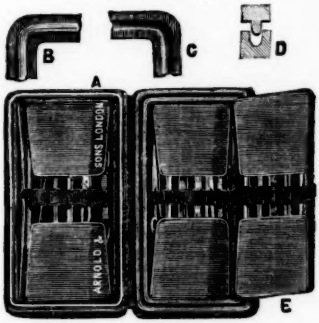
Until the election of Dr. Fleming, no veterinary surgeon had been elected a foreign member, and he is now the only one. There are no veterinary surgeons foreign associates or correspondents; indeed, there has only been one since the Society was founded—Professor Viborg, of Copenhagen, who was elected a foreign associate in 1801.

We have ventured to give a short sketch of this somewhat exclusive Society, in order that the profession in this country may be able to estimate the honour which has been conferred upon it, an honour of which we, personally, are deeply sensible, and one of which no other country can boast.

A most remarkable circumstance in regard to the bureau of the Society for this year, is the fact that the President is the famous chemist, Chevreul, who is more than a hundred years old.

IMPROVED POCKET-CASE FOR INSTRUMENTS.

(PATENTED.)



THE above woodcut depicts a new form of case, being impervious to water, and air-tight.

The frames, Fig. A, are made of metal, one side grooved, the other raised; when closed wedging together, Figs. B, C, D. The frames are covered with fish skin, prepared similar to leather, being in itself waterproof.

This invention is also applicable to the Army Regulation Pouches.

Army Veterinary Department.

Gazette, March 20th.

Veterinary Surgeon John B. W. Skoulding, has been placed on retired pay, March 18th.

Veterinary Surgeon Richardson has arrived in England from Karachi on twelve months' sick leave.

At the Levée held by command of the Queen at St. James's Palace, on March 7th, by H.R.H. the Prince of Wales, the following presentations were made :—

Principal Veterinary Surgeon, Dr. George Fleming, C.B., on being made a C.B., presented by the Duke of Cambridge.

First-class Vet. Surg.	A. E. Queripel,	presented by	the	Principal	Vet.	Surg.
" "	C. Phillips	"	"	"	"	
" "	J. Hammond	"	"	"	"	
" "	J. Burton	"	"	"	"	
Veterinary Surgeon	R. Pringle	"	"	"	"	
" "	E. Day	"	"	"	"	
" "	C. Rutherford	"	"	"	"	
" "	H. T. W. Mann	"	"	"	"	

First-class Veterinary Surgeon F. Walker, 1st Life Guards, attended the Levée.

Obituary.

Death has removed from our ranks a very worthy and respected colleague, Mr. T. W. Gowing, F.R.C.V.S., London, who died on March 16th, aged 80 years, though he only graduated in 1847. He served the offices of Vice-President and Councilman for sixteen years, during which period he was zealous in assisting in promoting the advancement of the profession in every way he could. He also contributed valuable information on professional subjects to veterinary periodicals; and as a Fellow of the Central Veterinary Society at its formation, and for some years subsequently, he displayed his enthusiasm and great practical knowledge, greatly to the advantage of his colleagues.

Mr. George South, M.R.C.V.S., London, another old and esteemed member, has also left us at a ripe age, he having graduated in the same year as Mr. Gowing.

Mr. E. M. Davy, M.R.C.V.S., late of St. John's Wood, London, a comparatively young member (having graduated only in 1877), is reported dead.

Henry Peele, M.R.C.V.S., of 11, Tower-street, West Hartlepool, died February 28th, 1888, aged forty-seven years. He was a native of Durham, and settled in West Hartlepool in 1863 (his diploma bearing the date April 27th, 1863), where he soon formed an extensive connection.

He was the Veterinary Inspector to the Privy Council for the port of Hartlepool; Veterinary Inspector for the boroughs of Hartlepool and West Hartlepool; as well as being the Local Veterinary Inspector for the West Hartlepool Division of the County of Durham. The Royal Agricultural Society of England appointed him their consulting veterinary surgeon for his district. He contracted a severe cold in carrying out his professional duties, which developed into a fatal attack of Pneumonia. Most of the leading people of the district followed the remains of the deceased to their resting-place; all classes, both rich and poor, were strongly represented at the funeral.

Jurisprudence.

IMPORTANT CHARGE OF CRUELTY—VETERINARY EVIDENCE.

On February 20th, at the Leeds Town Hall, before Mr. Bruce, stipendiary magistrate, Mr. W. Wharam, manager; John Unwin, bus driver; and Thomas Mahon, horsekeeper, in the employ of the Leeds Tramways Company, were

summoned for having cruelly ill-treated and tortured a horse on January 7th. Mr. Warren prosecuted on behalf of the Royal Society for the Prevention of Cruelty to Animals. Mr. H. A. Child, Leeds, defended. Mr. Child asked that all professional witnesses in this case should leave the court, and although the request was a very unusual one, it was complied with. A life-size model of a horse's head was produced in court, to which was fixed a "rope gag"—an exact copy of the one which was used by the defendants. For the prosecution two independent witnesses and two policemen having given evidence,

Inspector Alexander, of the R.S.P.C.A., was called, and said that he was in Briggate on January 7th, at twelve o'clock, when he saw Unwin driving two horses in a "bus." He noticed that one of them was much distressed, that its mouth was gagged up, the tongue was swollen and discoloured, and protruding from the mouth at the side. Witness had had twenty years' experience of horses. The animal was wearing heavy kicking tackle of chains and straps along with the "cord rope gag," and the "gag" was fastened tightly. The driver saw him watching the horse, and he turned into Duncan Street, and went to the back of the Corn Exchange. Witness followed, accompanied by two constables. In Crown Street he saw the horse being hurriedly taken out of the bus. The kicking tackle was removed, and witness examined the horse. The horse was gagged to prevent it getting its head down, and the weight was thrown on the mouth instead of on the collar. There were wounds on each side of the mouth. Witness asked Unwin why the animal was being tortured with the "gag," and he replied, "I know it's punishing it, but I didn't put it on. I've had to drive it like that since eight o'clock this morning." There was a crowd of people about, crying "Shame!" Accompanied by P.C. J. Smith, he followed the horse to the tramway stables in North Street. He there saw Mahon, the foreman, and called his attention to the horse. He asked Mahon if the gag was put on by his orders. Mahon replied, "Yes, I put it on; it is not a 'gag,' it is only a bearing-rein to keep his head up." A bearing-rein had a proper bit, and was a very different thing. It (the gag) was crossed in the mouth, and passed through a ring, and back to the saddle. Mahon afterwards said, "I see it's punished him a bit, he wants punishing, he's a kicker." Mahon was abusive, and asked what he knew about a horse. Mahon ordered the horse to be put in the stable, and slammed the door in the face of himself and constable, and said, "You don't go in there! You are trespassers and impostors here, and I order you off the premises. That's the Company's orders." Witness then took Mahon's name and address. Witness went two hours afterwards with Mr. Frank Somers, veterinary surgeon, to the stables. Mahon allowed Mr. Somers to make an examination of the horse, whose mouth seemed then to have been cleansed. He asked Mahon to let Mr. Somers see the "gag," and he did so, expressing a wish that witness had the rope round his neck. Next day witness saw Unwin, who said that Mr. Wharam, the manager, saw the horse shortly before witness did on the 7th, and said that he was to give it another journey. Witness went to the Company's office, and Mr. Wharam admitted the fact. Witness had heard of the Yankee check-rein, but had not seen one, and could not say whether this "gag" was such a rein. Mahon said he had used it for years, and with the best results.

Mr. Frank W. Somers, M.R.C.V.S., Leeds, said: He was in practice in Leeds, and was called in to see the horse in question on January 7th. He had an opportunity of examining this animal two hours after it had been stopped by the Inspector. He found on each side of the mouth at the angles, two raw wounds, which had been recently done, and congestion of the tongue, and inflamed gums. He had seen the "gag" which had caused

these injuries, and he considered it a very cruel apparatus. In his opinion, such an apparatus would torture the animal's mouth while extending or lowering the head. He had never seen such a thing used. He had seen the "bit," which was covered with blood. He strongly commented upon the barbarous practice of using such an apparatus, even if it might prevent kicking. Such an apparatus as a "gag-rope," or, as it was termed by the defendants, a "check-rein," would undoubtedly cause great pain, particularly if it was worn long, and if for four hours, would certainly be torture. He condemned the use of "bearing-reins," and this apparatus was much worse.

Professor Pritchard, a member of the examining body of the Royal College of Veterinary Surgeons, and a practitioner in London, said that the apparatus described would undoubtedly cause pain. If a horse's mouth was covered with blood there would be clear evidence that the horse had suffered pain. It would punish the horse considerably to keep it in the position illustrated for four hours. In fact, it would cause pain if such an apparatus was only applied for some few minutes. It is not necessary to punish a horse to prevent it kicking. He did not think a horse could draw a load or a vehicle with the lower jaw and all the weight on the bearing-rein. There are many horses in London with "check-reins" on, but certainly not with an apparatus of torture like the one described. The instrument used in this case would not prevent an animal kicking.

Mr. E. H. Scott, M.R.C.V.S., Harrogate; He had seen the apparatus described, and considered that it would certainly be an act of cruelty to apply it. He said it would cause considerable pain to the animal. He had never seen anything like it before, and, even if it were judiciously applied, would not prevent an animal kicking.

Mr. George Hardie, M.R.C.V.S., York: The apparatus used to prevent the horse kicking was, in his opinion, an act of cruelty. He had been in practice for twenty years, but had never seen anything like the instrument in this case.

Mr. Fred Proctor, M.R.C.V.S., Manchester, corroborated the former statements. He said he had seen a similar apparatus used in Manchester some ten years ago. He certainly considered it an act of cruelty.

This concluded the case for the prosecution, when Mr. Child had each of the defendants in the box.

Thomas Mahon said that he had been six years in the employ of the Leeds Tramway Company, and had had thirty years' experience of horses. This horse had become a kicker, and had been sent to them to put in a 'bus. He employed upon it the over-check rein used for years. The tackle was fixed to the roll-bolts of the splinter-bars. He had seen it used scores of times, and it had been mostly effective. So long as the horse behaved itself the rein would inflict no pain. In the present case a slight skin-wound was caused. The best judges would approve of the treatment. He said Mr. Wharam did not know of the treatment applied.

John Unwin, one of the defendants, deposed that he had driven the horse five times. On the day in question he ran very quietly, and his head was not too tight.

For the defence, along with several horse-dealers, was—

Mr. John H. Ferguson, M.R.C.V.S.: He was called in to see the horse on January 9th, two days after it had been stopped by the inspector. He did not find its tongue swollen, and if it had been there would have been some trace of it. He noticed a scar about the size of a shilling on the outside of the mouth, which, he considered, had been caused by the horse rubbing its head against the pole-bar. The apparatus used would prevent an animal kicking; he thought it would simply check him without doing the horse an

injury, and would not cause his mouth to bleed. He stated that the horse was suffering from "humour," and he ordered medicine, as it was "too full of blood." He had never seen such an apparatus before.

Mr. John McLean, M.R.C.V.S., assistant to Mr. Ferguson, stated that he had examined the horse on January 9th, two days after it had been stopped, and he found nothing whatever in the way of wounds or cuts; there was a small scar on the face. If there had been any wounds inflicted on the Saturday he should expect to find something on the Monday. He had seen the apparatus, and it could be adjusted as to cause no pain. This apparatus would prevent kicking, without causing any pain whatever. He should think that the scar on the face was caused by the horse rubbing its head against the pole-bar.

Mr. A. W. Mason, M.R.C.V.S., Leeds: He had seen this apparatus. It is something similar to the illustration which was in Court on the table. It would have a check upon horses kicking, and, if properly adjusted, would not injure the animal. It would check the horse by keeping its head up. If the horse kicked, and the apparatus caused the animal pain, he did not think the animal would continue to kick.

Mr. George E. Bowman, M.R.C.V.S., Leeds: He had seen the apparatus fixed on the horse, and, in his opinion, would prevent kicking if it was adjusted so as to cause the animal no pain. He thought this apparatus would have a better effect upon a vicious horse than the ordinary kicking-cradle. He had seen the apparatus used about six times.

Mr. Child having spoken on behalf of the defendants,

Mr. Bruce dismissed the summons against Wharam, observing that there was no evidence against him. He thought the apparatus was not a reasonable one to prevent kicking. He fined Mahon £5 and costs, or in default one month's imprisonment; and Unwin 40s., or one month's imprisonment.

A REMARKABLE HORSE CASE.

In January last, in the High Court of Justice, before Baron Huddleston and Mr. Justice Manisty, the case of Tunaley *v.* Benton, came on for hearing. This was an application by the plaintiff for a new trial. He was a horse-keeper at Wymondham, and purchased a pedigree horse called "Reliance" of Mr. Thomas Benton, of Earith, Huntingdonshire, for £145, warranted sound. It was alleged it had Bone-spavin. The case was tried at Lincoln assizes, when the jury found a verdict for the defendant.

Mr. Poyser (instructed by Mr. Linay, of Norwich) now appeared for the plaintiff, and Mr. Horace Brown and Mr. Le Riche for the defendant.

The new trial was asked for on the ground that the verdict was against the weight of evidence, and also upon the somewhat unusual ground that the defendant, Mr. Benton, was alleged to have deceived the Court at Norwich assizes by producing a horse for examination which, it was alleged, was not the one in dispute; and, further, upon the ground that it was alleged by the plaintiff that Mr. Page Wallis, of Cambridge, who had testified at the trial that a horse he had examined, and stated had no Bone-spavin, was not the one in dispute.

Upon reading the Judge's notes at the trial, Mr. Baron Huddleston remarked that Mr. Poyser would have a difficult task to upset the verdict on the ground that it was against the weight of the evidence, for though it was true that Mr. Santy, of Norwich; Mr. Lowe, of Norwich; and Mr. Anger, veterinary surgeons, had given evidence to the effect that the horse had Bone-spavin, yet it appeared that Mr. Beart, of Lynn, and Mr. Gresswell, both veterinaries of very superior knowledge; Mr. Page Wallis, of Cambridge, a veterinary surgeon of almost unassailable experience, besides three other

persons, had all sworn that the horse was perfectly sound. Hence the Court would not be likely to interfere with the verdict of the jury on such a conflict of evidence.

Mr. Poyser: But we say the horse that Wallis examined was not the same horse.

Mr. Baron Huddleston: Yes, I know. You allege that a scandalous fraud has been committed. That you'll have to prove.

Mr. Poyser then read the evidence of Frederic George Waring, of Earith, Huntingdon, a groom. It was to the following effect:—That he well knew the horse "Reliance," being groom to the defendant. That the defendant had in his possession another horse very much like the one called "Reliance," and after the dispute about "Reliance," when Benton had bought him in at the auction, he called Mr. Page Wallis and Mr. Gresswell, of Peterborough, in to examine the other horse, which was somewhat similar in appearance to "Reliance," and that this was the horse that they swore to at the trial. He further stated that he was ordered by the defendant not to show the veterinary surgeons the real horse.

Mr. Baron Huddleston: This is a bold affidavit, Mr. Poyser. I call your attention to the fact that there are twelve alterations in the original one. Now let me see what Mr. Benton says in answer to it.

Mr. Benton's affidavit was then read. He said it was absolutely untrue that Wallis and Gresswell saw the other horse, and, moreover, both horses were produced at Norwich assizes, so that there should be no mistake; that Waring was then in his employ; that some time after the trial he had to discharge Waring, or threatened to do so; that four days after that he left Benton's employ without notice. Mr. Benton then went on to say that the affidavit by Waring was sworn at the house of a man named Chandler, in Earith, against whom Benton had recovered judgment in the County Court, and bore him (Benton) ill-feeling. The affidavit of Waring was sworn before Chandler's solicitor in the County Court action, who must have come from St. Ives, a distance of six miles, for the purpose.

Mr. Baron Huddleston: Oh, I see it all now. I thought there was something behind. Now it appears they have got hold of a man who had lost his situation, and then bring over a solicitor specially to swear him to an affidavit which charges a scandalous fraud. I see Mr. Page Wallis also denies it. Every step you take, Mr. Poyser, shows your application to be untenable. Now, if you will go on after what I have said, go on.

Mr. Poyser still urged that the verdict was against the evidence.

At the conclusion, Mr. Baron Huddleston said: We won't trouble you to address us, Mr. Horace Brown. This is as clear a case as I ever saw. The verdict was quite right. No doubt three veterinary surgeons swore the horse had Bone-spavin, but seven competent witnesses swore he had not. So the jury had to decide. Mr. R. Poyser sneers at the jury because they were farmers. Why should a jury of Norfolk farmers not know Bone-spavin? I should think they do, as I know something of Norfolk. No doubt Santy was very sanguine, but the twelve jurors did not agree with him. I think the balance of testimony was in favour of the defendant, and will not disturb the verdict. But besides this I think that Waring's story, which alleges a most extraordinary fraud, is a cock and bull story. As gross and scandalous and criminal as I ever heard is the fraud which Mr. Poyser asks us seriously to believe. I emphatically say I don't believe Waring. This appeal must be dismissed, and with costs.

Mr. Justice Manisty: I entirely concur. To my mind this verdict was a right one, even if the evidence of the defendant's veterinary surgeons was entirely out of the case. The jury saw the horse, it was admitted to be the same, and they found he had not Bone-spavin. As to the charge of fraud, that is a perfectly idle and scandalous charge.

Parliamentary Intelligence.

House of Lords, March 9th.

VIVISECTION.

Viscount SIDMOUTH moved that an humble address be presented to Her Majesty for correspondence between the Home Office and the Society for the Protection of Animals from Vivisection, in reference to two recent instances of infringements of the law; and asked whether it would in future be a portion of the duties of the authorities at the Home Office to cause legal proceedings to be instituted in similar cases. He said he had brought these cases before the House a few days ago, when the noble lord who represented the Home Office was, unfortunately, not in his place. In one case the operation was performed on a rabbit, but without anæsthetics, and in the other case a number of animals were inoculated in the presence of a number of persons and without anæsthetics. The law had been distinctly contravened, but upon the attention of the Home Secretary being drawn to the cases, he replied, in the one case, that the licence would be withdrawn, and in the other that so long a time had elapsed since the infringement of the law that he did not feel justified in instituting proceedings. Under these circumstances he desired to know whether in future, in cases brought to the attention of the Home Office, it would be deemed its duty to institute proceedings.

Earl BROWNLOW said it certainly was a portion of the duties of the authorities at the Home Office to cause proceedings to be instituted in cases where the Vivisection Act had been infringed, and that duty had in the past been discharged. This matter was brought before the House a short time ago by the noble viscount when he himself was not in his place, and the Prime Minister then pointed out that no answer could be given, as the Home Office did not know to what cases the noble viscount referred. Since then the noble viscount had privately informed him upon this point, and it appeared that the cases to which he referred were those of Mr. Hine and Mr. Penberthy. Mr. Hine had a certificate, but clearly exceeded the powers granted by the certificate; and the Home Secretary, on having his attention called to the matter, withdrew the licence. Mr. Penberthy had not a certificate, and his explanation was that he was acting as the assistant of Professor Robertson, who had. It was clear, however, that he had infringed the law. But having regard to the fact that a considerable time had elapsed, the Home Secretary did not think it was a case in which proceedings should be instituted. There were other extenuating circumstances. Cases could be dealt with by the Home Office according to their circumstances, and it was not necessary on every occasion to take legal proceedings. The Government had no objection to lay the correspondence asked for upon the table.

The motion was agreed to.

House of Commons, March 12th.

COW DISEASE.

In the House of Commons on the 12th inst., in answer to Mr. Picton, Sir H. Maxwell said that some months ago Professor Brown was instructed to make an inquiry as to the existence among cows of an eruptive disease of the teats, which it was alleged in one case (the Hendon outbreak) had induced Scarlatina in man by the agency of the milk. In the course of the inquiry he availed himself of Professor Crookshank's offered assistance in working out the micro-pathology of the affection. In regard to the outbreak in Wilt-

shire, Professor Crookshank has stated that he considered the disease was Jennerian Cow-pox. Professor Crookshank has not yet furnished a report on the micro-organism of the Cow Disease. A report on the whole subject is now being prepared, and will be issued as soon as possible by the Agricultural Department.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE General Annual Meeting of the above Association was held at the Great Western Hotel, Reading, on 24th February, F. W. Wragg, Esq., President of the Association, in the chair. There were present: Sir H. Simpson, Professor Pritchard, Messrs. Flanagan, Wheatley, and Barlow (Reading), Simpson (Maidenhead), Wilson (Berkhampstead), Drewe (Abingdon), Carter (Guildford), Walker (Oxford), Wilkins (Lambourne), Langford (Shaftesbury), Howard (Newbury), Oatway (Great Stanmore), Page, jun. (Banbury), Mellett (Henley-on-Thames), Mulvey (London), Barford (Southampton), Lepper (Aylesbury), and Kidd (Hungerford), hon. sec.

The following visitors were present: Messrs. Greaves (Manchester), Banham (Cambridge), Wilson, jun. (Berkhampstead), and Rogers (London). The following gentlemen were unanimously elected members of the Association: Messrs. W. Hunting (Down-street, Piccadilly, London), F. Bayley (Devizes), and W. J. Roberts (Wharf-road, Paddington).

On the motion of Mr. WILSON, seconded by Mr. J. P. S. WALKER, it was unanimously resolved that a letter of condolence be sent by the secretary on behalf of the Association to the widow and family of the late Professor Robertson.

Mr. MELLETT then moved the following resolution: "That some of the surplus money in the hands of the treasurer be used in the purchase of instruments for the use of the members of the Association." After considerable discussion, it was agreed to appoint a committee to consider the subject, and report to next meeting.

The next business was to consider the election of members of Council, when letters were read from the hon. secretaries of the Lincolnshire, Norfolk and Eastern Counties Associations, respectively, asking this Association to support their nominee. After short discussion, Sir Henry Simpson gave notice that at the next meeting he would move a resolution with a view to the subject of elections to Council being put on a satisfactory basis.

The next meeting will be held at Henley-on-Thames, on 27th July.

The PRESIDENT then delivered his inaugural address, at the close of which he called attention to a number of very interesting and beautifully-mounted microscopical specimens, which had been brought for the inspection of members by Mr. Wilson, and which were much admired.

The members and friends afterwards dined together, when a very pleasant evening was spent.

H. KIDD, *Hon. Sec.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE annual meeting of this Association was held in the County Hotel, Newcastle-on-Tyne, on February 24th, 1888, the President, Mr. D. Dudgeon, in the chair.

Present:—Professors Walley; Messrs. Wm. Hunter, J. W. T. Moore, G. Elphick, W. A. Hancock, A. Hunter, E. Bennett (Army Department), C. Stephenson, and H. Hunter, Newcastle-on-Tyne; Wm. Stevenson, Whitburn; Wm. Awde, Stockton; C. S. Hunting, South Hetton; D. Macgregor, Bedlington; J. Gofton, North Shields; Wm. Wheatley, South Shields; F. R.

Stevens, Darlington; J. G. Deans, Bishop Auckland; G. M. Mitchell; and the Secretary, Sunderland.

Visitors:—Professor McFadyean; J. Aitken, Newcastle-on-Tyne; G. F. Prickett, Bedlington; W. E. Lawrence, Durham.

The minutes of the previous meeting were confirmed.

Apologies for non-attendance were received from Professors Williams, McCall, and Duguid; Messrs. H. Peele, P. Snaith, W. F. Mulvey, T. Greaves, J. D. Barford, T. Jack, G. A. Banham, A. C. Cope Donald, J. E. Peele, A. Leather, R. Brydon, C. Sheather, W. W. Smart, J. B. Nisbett, G. Farrow, junr., C. Gresty; Drs. Fleming, Armstrong, and Harris.

Mr. Deans (Bishop Auckland) was unanimously elected a member of the Association.

The SECRETARY nominated Mr. H. Gelsthorpe, of Darlington, for election as a member.

On the motion of Mr. Elphick, seconded by Mr. C. S. Hunting, Mr. Bennett (Army Department) was unanimously elected an Honorary Associate during his stay in Newcastle.

The President, Vice-Presidents (Messrs. H. Hunter and J. Gofton), Messrs. Moore, Elphick, and the Secretary were elected the Committee to revise the rules of the Association.

The PRESIDENT then referred to the death of Professor Robertson. He said he was a man of great and varied ability, a thorough worker, and everyone would regret his untimely end. It was only a short time since he was there, and read a most interesting paper. In last July we had the honour of entertaining him at our annual dinner. He thought it was the duty of the Society to record on the minutes their high appreciation of him.

Mr. STEPHENSON fully endorsed what had been said by the President with regard to Prof. Robertson, and could not adequately express his feeling in the loss they had sustained. He was one of his oldest friends in the profession, and they were alike in having commenced life in the shoeing forge.

It was proposed and carried unanimously, that a letter of condolence be sent to Mrs. Robertson.

The PRESIDENT then delivered his annual address. He said:—

MR. VICE-PRESIDENT AND GENTLEMEN,—I have to thank you most heartily for having again elected me President. It is the fifth time you have conferred that honour upon me. I can assure you that I consider it no light compliment thus to enjoy the confidence and esteem of my brother professionals. I think you will agree with me that the chief aim of this Society is the advancement of veterinary science, and this will be best accomplished by each member regularly attending the meetings, taking part in the discussions, and contributing papers when called upon. I may say that this Association may lay claim to having done some good work in the past, and I hope that you will press on to do still more in the future. It was at one of our meetings that it was first suggested that the election of members of Council should be settled by voting papers sent to every member of the Royal College of Veterinary Surgeons, rather than by personal voting at the annual meeting; it was several years before this suggestion bore fruit, but now it has been adopted, and has proved a great boon to the profession. At our meeting last May we passed several resolutions regarding the examiners and the examinations, and I believe the Council has adopted the major part of them; so that we may at least lay claim to have been amongst the pioneers of important reforms. There is also the social advantages of these gatherings, the amount of good feeling they produce among the members, and friendships have been formed that will be lasting as life itself. I was sorry to see in the *Chronicle* on Thursday that the Scotch Metropolitan Society had been broken up. I know nothing

of the circumstances as to the breaking up, but am sorry such a society has gone. I am old enough to remember the disruption of the kirk in Scotland. The discontented ministers came out in a body and formed a new church, and the other two churches were now perhaps the most prosperous churches in Scotland. I hope, too, that two good societies will be formed in the place of the Scotch Metropolitan, and that very soon the members of each society will attend each other's meetings and do what they can for one another. One or two matters I should like to notice. With regard to the education of the student, I trust that the recent alterations that have been made in the curriculum, the additional members put on the examining board, and the increased facilities for acquiring practical knowledge, will add to the usefulness and efficiency of those about to enter our profession. Milk contamination had been brought prominently before agriculturists and the public by an outbreak of cow disease at Hendon. It was endeavoured to show in that case that the produce of the cow had led to Scarlatina in the human system. It would require, I think, a great stretch of the imagination to arrive at the conclusion that a cow which had no Scarlatina could introduce it into the human being. Government had intervened and their officers had tried their skill in the matter. It was important, too, that such a matter should be settled; for if the public became imbued with the idea that it was possible to get such a disease by taking milk, it would shatter the lifelong faith the people had in the nutriment of that fluid. I believe that the investigations which have taken place at the instance of the Veterinary Department showed that, if the milk was contaminated, it was contaminated after it had been taken from the cow. Talking with an old professional friend the other day, he assured me that there is a great future in store for the profession. This I believe is true, but you must not expect it from Government, or Acts of Parliament, or from any source outside ourselves. It is only by patient, persevering, plodding research, and by straightforward, honourable conduct that a man can rise in his profession, and it seems to me that the study of microbes and bacteria must be very carefully gone into. In conclusion, I would urge upon all, and especially upon the young, members when they begin practice, that in all their actions they must look not only to their own advancement, but also to the honour and advancement of their profession.

A most interesting paper was read by Professor WALLEY on "The Effects of Lightning, Fire, Smoke, and Steam upon Animals."

A discussion followed, in which Messrs. ELPHICK, H. HUNTER, MCGREGOR, STEVENS, MITCHELL, the PRESIDENT, and Professor MCFADYEAN took part. Votes of thanks to Professor Walley and the President brought the meeting to a close.

In the evening the annual dinner took place. The President (Mr. D. Dudgeon) occupied the chair, and Mr. H. Hunter filled the vice-chair. After the tables were cleared a short toast list was proceeded with. The usual loyal and patriotic toasts having been proposed and duly honoured,

Mr. H. HUNTER proposed "The Royal College of Veterinary Surgeons," with which he coupled the name of Professor Walley. He was glad that the College had shown itself amenable to good advice and to reason; and he was more glad that they in that Society were the authors of the resolutions which the Royal College had adopted to a great extent, and he thought that after adopting the other recommendations and resolutions the College would be pretty well as good as it ought to be.

Professor WALLEY responded briefly, and pointed out that considerable good had resulted to the Royal College from the effects of outside agitation.

Professor WALLEY proposed "The North of England Veterinary Medical Association." He said it was a good many years since he first came there as

their guest, yet he saw now, as then, that perfect unanimity prevailed amongst them. They had done, as was said by the President in the afternoon, a good work in the past, and he hoped they would continue to do so in the future. Personally, he was not in favour of veterinary associations taking upon themselves to discuss at any very great length what he might call politics. He thought the principal function of the Society, so far as actual work was concerned, should be the consideration of scientific subjects. He was sorry that in wishing them to go on with unanimity he could not take the lesson further north; but that had little to do with their association, which he hoped would continue to increase, not only in numbers, but in usefulness. With the toast he begged to couple the names of Mr. Dudgeon and Mr. H. Hunter.

The PRESIDENT, in response, said that, without boasting, their Society had certainly had a very fair measure of success. True, there was at one time a little apathy, but, like giants refreshed with wine, they woke up, and since then he thought they had been more vigorous than before. He was sorry to hear of the split in the North, involving the disruption of the Scotch Metropolitan Society; yet very possibly two societies might arise from the fall of the first, and he hoped in a very short time they would be able to interchange mutual friendliness. They had reason to look for the success of their Society in the future, though that would depend upon the members themselves.

Mr. H. HUNTER also responded.

The PRESIDENT gave the toast, "The Veterinary Schools."

Professor MCFADYEAN, in responding, said he thought he might at least say that the schools were about as good as could be got for the money; but they were still very far from being all that they ought to be. It was not very difficult to find the reason. In that matter-of-fact country they would not get anybody to work for nothing; and they would not get eminent men to teach veterinary subjects for £200 per year. At the present time the schools were attempting to teach far too much; that was to say, the curriculum in consideration of the time allowed for study was overloaded.

Mr. MOORE, in proposing "The Medical Profession," referred to the case at Hendon, where Scarlatina was attributed to the consumption of cow's milk. He held that when in such cases careful investigation was held, the result was to prove the total immunity of the cows from disease. Until such time as the medical profession united with the veterinary profession to conjointly pursue investigation into the question of transmissibility of disease from animals to men, there would always be an unsatisfactory state of affairs. There was, he felt, in the medical profession too much proneness to usurp the duties of the veterinary profession.

Professor MCFADYEAN responded. He said there might be a pardonable feeling of irritation on the part of veterinary surgeons when they looked at the attitude taken up by medical men in the past. He believed, however, that was a thing of the past, and was to be explained more by ignorance of the medical profession than by the ignorance of the veterinary profession. It arose from the ignorance of the medical profession of the diseases of the lower animals, and ignorance of their important bearing on health. He had been deputed by the Privy Council to make investigations with a view of ascertaining if there was any warrant for saying that the disease Scarlatina could be imported from a cow to a human system. His experiments were not yet completed, but he had not yet seen anything to lead him to believe that an epidemic of Scarlatina was traceable from the cow. In conclusion, he agreed with Mr. Moore that the professions could work hand in hand without encroaching on the province of each other.

Other toasts were proposed, and songs were sung at intervals, a most enjoyable evening being spent. G. R. DUDGEON, Hon. Sec.

BORDER COUNTIES VETERINARY MEDICAL SOCIETY.

A GENERAL meeting and annual dinner of the above Society was held at the Bush Hotel, Carlisle, on the 27th of January, 1888, with J. Bell, Esq., Carlisle, President for the year, in the chair.

The members present were Messrs. McIntosh, Dumfries; Dawson, Carlisle; Pears, Penrith; Potts, Wigton; Bell (jun.), Carlisle; Tallentire, Skelton; Little, Abbey Town; Carruthers, Brampton; Chalmers, Annan; Hoadley, Eston; Young, Cockermouth; Prof. Williams, Edinburgh; Messrs. Donald, Wigton; Thompson, Aspatria; Carlisle, Carlisle; Howe, Keswick; Crondace, Haltwhistle; Bell, Haltwhistle; F. Armstrong, Penrith: Coates, Brampton; McCauly, Longtown; Chalmers, Moffat; Troughear, Hesket; Clough, Whitehaven; Prof. Lewis, Edinburgh; Prof. J. Armstrong, Penrith (Hon. Sec.).

Visitors were Messrs. Steel, Shore, and Dr. Webb.

Apologies were read from all the members not present.

The Secretary then read the minutes of the previous meeting, which were confirmed.

The SECRETARY moved that the following gentlemen be elected members of this Society: Messrs. F. Armstrong, Penrith; Anderson, Hexham; Troughear, High Hesket; Chalmers, Moffat; and Bell, Haltwhistle. Mr. PEARS seconded, and they were unanimously elected.

Dr. Webb, Principal of the Aspatria Agricultural College, promised to read a paper at next meeting.

Mr. BELL, President for the year, read his inaugural address as follows:—

GENTLEMEN,—I must, in the first place, thank you for the honour you have done me in electing me as your President for the year 1888. The honour is one which I appreciate all the more because it has been conferred upon me by those who are actively engaged in the same profession with myself, and with many of whom I have had opportunities more or less frequent, of coming into contact, not only at meetings of our Association, but also in other capacities. I shall ever regard it as no mean privilege to be able to say that the Border Counties Veterinary Medical Society thought me worthy to be one of its earliest Presidents; and to the Society itself I take this opportunity of wishing it continued prosperity, at the same time expressing a hope that the gatherings under its auspices may result in advantage to every individual member. It is proverbial that "doctors differ." I am revealing no professional secret when I say that even veterinary surgeons have sometimes been known to differ. It is, I take it, one of the objects of our meeting to ascertain precisely in what we differ, and to state the grounds of our differences. In the clash of conflicting opinions, the truth may be reached, and a light, true as well as new, shed on many knotty points. It has been usual for the President at the opening meeting of his year of office to deliver an inaugural address, and I am conservative enough to have no desire to depart from what may now be regarded as the established usage. There are a multiplicity of subjects upon which one might have prepared an address; but while casting about for some suitable topic, I kept in mind the fact that this is the Jubilee year of Her Gracious Majesty Queen Victoria, and I thought I could hardly do better than take a brief retrospect of the progress of science, and more especially of veterinary science, during the last fifty years.

In many respects these fifty years have witnessed great changes. When the Queen came to the throne in 1837, railway locomotion was in its infancy. Although not an old man yet, I myself travelled by the very first passenger train that ever steamed out of Carlisle station. I must, however, frankly admit that I have not the slightest recollection of the interesting event. Now, in the present year, Carlisle is the focus of seven great railways, and in the

country at large about 20,000 miles of rail have been laid at a cost of more than eight hundred millions. In the same year (1837) the first electric telegraph was constructed by Professor Wheatstone on the London and Blackwall Railway. It was then regarded as little more than a scientific curiosity. Now almost the whole civilised world enjoys the benefit of electric communication, and the "telegram" has become an important factor in our daily life. Before Her Majesty had completed her first year of rule, the Atlantic had been crossed for the first time by a steamer. The Great Western Mail Packet, when it sailed into New York harbour in June, 1838, practically solved the great problem of ocean steam navigation, and brought Europe and America within a few days' sail of each other. Science has made great progress in other directions, over which one might like to linger did time permit; but I hasten on to notice something of what it has accomplished in the healing heart, and more particularly in our own department.

It may perhaps be doubted whether science, in some of its results, has added materially to the sum total of happiness. Is it not possible—nay, probable—that railway travelling, and the "hurry-scurry" incidental to railway journeys, may have something to do with the extreme prevalence in these days of some forms of nervous diseases? The wearied "veterinary" who has just got his feet into his slippers after a hard day's work does not bless the telegraph boy who brings a message which necessitates his immediate taking a long drive to visit a "patient." The British farmer does not much appreciate the great steamships which enter the Mersey laden with the wheat grown in the fertile valleys of North America, or those with cargoes of New Zealand sheep in their holds. But how different it is when science comes and places her choicest treasures at the disposal of the healing art! Then one feels assured that the results can be nothing but beneficent, and that no living thing will suffer hurt. Let us think for a few minutes of what science generally has done for the medical and veterinary man during the last half-century. Time will only permit me to refer to some of the more striking facts. If it had been said fifty years ago that before the end of the century the healing art would find in optical science a most efficient coadjutor, it would have sounded incredible. Yet so it is. For purposes of diagnosis the microscope is now absolutely invaluable. In some diseases, as has been remarked, "its searching eye finds out death at a glance." Sometimes, for instance, when the surgeon has removed a tumour, certain appearances in the lens show the presence of fatal cancer. But the microscope not only detects disease; in all researches into the germ theory of disease it must be in almost constant use. If the germ theory be established, if it can be shown that the most deadly diseases which afflict man and beast are distinctly traceable to those germs, half the battle with disease is won; and to the microscope, in the hands of patient and observant men, will belong the credit of accomplishing what may well be regarded as one of the greatest feats of modern science. When we contemplate the myriads of lives that have been lost for generations by such diseases as Consumption and Cholera, and when the microscopist asks us to peer through his instrument and see for ourselves the minute organisms that have worked such fell havoc, we cannot but feel that this revelation is truly one of the scientific marvels of the age. As Beale tells us, he has in favourable circumstances, when working with the fiftieth of an inch focus object-glass, distinctly seen corpuscular aggregations in pus, with dimensions not exceeding in breadth the hundred-thousandth part of an inch, presenting all the distinctive characters of bioplastic life, and throwing off continually subordinate spherular and corpuscular germs that were just even with those advanced powers of the microscope upon the margin of invisibility. Besides the microscope, the physician in these days is also armed with the stethoscope, the laryngoscope, the ophthalmoscope, the

speculum, and the thermometer; but to these time will not permit me to refer. Another of the sciences—chemistry—has, during the Queen's reign, lent material aid to surgery and medicine. It is just a little more than forty years since chloroform was first used as an anæsthetic. The first instance of an operation under chloroform occurred in Edinburgh on the 15th November, 1847. So says Sir James Simpson, who may be called its discoverer, and the date is surely worth putting on record as marking what one has called the greatest of all discoveries in modern times—the application of chloroform in the assuagement of human suffering. Not only has chloroform diminished human suffering, and thereby proved (to quote the words of a thoughtful writer) "God's best gift to His suffering children," but it has rendered many difficult operations possible which could not previously have been attempted. I mean operations of a tedious character, such as excision of the jaw or tongue, in which otherwise the suffering would have been too prolonged. Within a quarter of a century of the discovery of chloroform as an anæsthetic, its use had become so general that one Edinburgh manufactory alone turned out "nearly three million doses per annum"—evidence, says Dr. Simpson, "to what a great extent the practice is now carried of wrapping men, women, and children in a painless sleep during some of the most trying moments and hours of human existence, and especially when our frail brother man is laid upon the operating table and subjected to the torture of the surgeon's knives and scalpels, his saws and his cauteries." Well was it said of Simpson:—

> "Great in his art, and peerless in resource,
> He strove the fiend of human pain to quell;
> Nor ever champion dared so bold a course
> With truer heart or weapons proved so well."

But man is not the only creature who profited by the use of chloroform. Very soon after its introduction it was found that it could be applied as beneficently to the lower animals, and I need not tell you how it has been used as an alleviator of pain, especially in regard to the horse. I suppose no veterinary surgeon would think of performing any serious or important operation without first administering chloroform. In this way the horse has become a partaker in the benefits of the modern scientific discoveries of its master—man.

The researches—let me say, the remarkable researches—into the germ theory of disease, which have occupied so large a share of attention during the last twelve or fifteen years, would of themselves have made this reign a notable one in the annals of medical and veterinary science. The germ theory (to which I have already made a brief reference in connection with microscopical research) is now something more than a theory. By common consent (to use the words of Professor Axe) "it is now admitted that specific diseases are the outcome of a struggle between animal and bacterial life. Specific diseases," he says, "arise out of living entities, or forms of a bacterial nature, each disease having its particular parasite—in some cases limited in its zoological range to particular species, in others extending to many. This points to the conclusion that each species of microbe requires for its propagation, growth, and development a peculiar and suitable soil, containing all the necessary organic and inorganic elements of nutrition, as well as a suitable environment and temperature." So far Professor Axe. My esteemed friend, Professor Williams, says on the same subject, and I have much pleasure in quoting his words, because they state, in a few concise statements, the results of his careful observations: "We may often find in outbreaks of Splenic Fever that we can trace no contagion whatever. There has been no Splenic Fever in that district within the memory of man. How has it come, then? If (he goes on to say) we bear in mind that these bacilli

may at any time be virulent, and at another time not virulent, I think we can clear up the mystery. A bacillus is developed during certain changes in hay-tea and brewers' grains. This bacillus, to all appearance, is the same as the bacillus of Splenic Fever, but the bacillus of hay-tea has no virulent effect—in fact, animals are eating every day of their lives millions of these very bacilli. But some German experimenters have proved to demonstration that this innocent bacillus will, under certain conditions, become virulent. By cultivation in blood serum it attains all the virulence of bacillus anthracis, and then inoculation with cultivated bacilli will produce all the symptoms of death from Splenic Fever. You have here, I think, a key to the fact of the so-called spontaneous outbreak of this disease. Owing to some peculiar condition of fermentation, the bacillus of hay-tea, and cotton-cakes, and so on will become altered; and what is the consequence? Very often you will find that the feeding of the animals upon the impaired cotton-cake will induce Splenic Fever. How has this bacillus got there? Simply owing, in my opinion, to the transformation of the innocous bacillus subtilis into the virulent bacillus anthracis, owing to its having propogated for generation after generation in this cake. A recognition of these will enable us to throw a light upon the so-called spontaneous eruption of these diseases. That a change takes place is proved by the cultivation of Pasteur. It is very easy to cultivate downwards, and by cultivating downwards the bacillus anthracis becomes almost innocuous, and the facts which have been established by Pasteur himself are sufficient to prove to any impartial mind that by attenuating the virus you alter the character altogether—it loses its virulence. Cultivate it, again, within an animal body, it regains its virulence. Hence we have a key to the outbreak of so-called contagious diseases in this country. "The key" thus supplied seems to me to solve many of the different theories of the question as to the origin of contagious diseases. It is, however, a question in which scientific research is still being continued, and the next few years may witness a great advance in our knowledge of the origin of diseases.

The question of inoculation as a preventive of Pleuro-pneumonia is closely connected with the germ theory, and has lately engaged so much of the attention of members of the veterinary profession that I may be excused for saying a few words on the subject. I may remind you that in 1880 Willems drew attention to the special germ corpuscle or microbium of Pleuro-pneumonia, stating that he had succeeded in obtaining it from the air of an infected stable. In the same year (I am now summarising part of the able paper of Professor Walley, read at the meeting of the National Veterinary Association in 1885) the Louvain profesors, Verriers and Bruylauts, described a Pleuro-pneumonia microbium, stating that they had cultivated it and experimented with it by inoculation, with the result that the inoculative lesions were materially modified. It is almost beyond doubt that Pleuro-pneumonia is due to a specific virus, which is endowed with great vitality. Some years since Dr. Fleming arrived at the conclusion that the evidence in favour of inoculation as a preventive of the disease was overwhelming. Mr. Rutherford's personal experiences are remarkable, and clearly tend to show that inoculation is a safe and certain remedy. "My first attempt," he says, "was on a large byre, which now contains sixty or seventy animals, but at that time reduced to ten or eleven, all more or less suffering from the disease. My friend offered to purchase fresh stock, and I was to inoculate them, and let the operation stand or fall by the result. The result was that those put in passed through and remained healthy in the infected byre until they were finally sold to the butcher; the others all died, and, as in this instance, so in hundreds of others." It is, however, suggested that the disease is likely to be communicated by inoculated animals. Against this idea there is the assurance of Mr. Rutherford, speaking with ample experience, that he did

not know a single instance where an inoculated animal has in any wise become a centre of contagion, always provided—and the proviso is most important—that at the time of inoculation they were healthy. There is another important requisite for the success of inoculation in Pleuro, as for vaccination in Small-pox. The virus itself must be healthy. I am well aware that there are some practical difficulties in the way of carrying out a general system of inoculation, but these need not concern us now. What I wish to emphasise is the fact that, as the result of scientific observation and discovery during the past half-century, the members of our profession have had placed in their hands what in all likelihood may prove to be a means of saving much valuable stock. Another striking feature in the reign of Queen Victoria should not pass unnoticed. During the last half-century, and more especially during the last quarter of a century, a professional interest has been awakened in the whole lower creation. Such an interest, perhaps, has not been shown in any previous age of the world's history. The old Roman said, "Whatever concerns man concerns me." The modern Britain goes further still, and says, "Whatever concerns animals of any kind concerns me." The wise man wrote, 3,000 years ago, that "the righteous man regardeth the life of his beast." The modern legislator goes further, and says that the life of the beast shall be regarded by everybody. The Queen herself is patron of the Society for the Prevention of Cruelty to Animals; and although the operations of the officials of the Society may not always be characterised by fine discretion, it is unquestioned that the intentions of its founders and supporters are excellent. Again, the great newspapers of the day did not think it beneath their dignity to write leading articles on the question of bearing-reins; and the still more vexed question of vivisection has had much more printers' ink shed over it, and has been made the subject of penal enactments. On this question of vivisection it is not necessary on this occasion to refer at length. I may, however, say that I entirely agree with the late illustrious Dr. Darwin, whose care for the lower animals was so great that it is recorded of him, in his recently-published Biography, that he returned one day from his walk pale and faint from having seen a horse ill-used, and from the agitation of remonstrating with the man. Darwin expressed the deliberate opinion that vivisection was justifiable for real investigations of physiology, but not for "mere damnable and detestable curiosity." "He was," says his son, "strongly of opinion that to prohibit experiments on living animals would be to put a stop to the knowledge of, and the remedies for, pain and disease." On the other hand, he would gladly punish any one who operated on an animal not rendered insensible, if the experiment made this possible. There is yet another point to be kept in mind. As the result of vivisection, animals will themselves derive benefit. Look, for instance, at Pasteur's results in modifying the germs of the most malignant diseases, from which, as it so happens, "animals will, in the first place, receive more relief than man." Again, let it be remembered how many lives and what a fearful amount of suffering have been saved by the knowledge gained of parasite worms, through the experiments of Vichow and others, on living animals.

What, however, I am now most anxious to point out is that, whatever side may be taken in the great controversy on vivisection, the very fact that it has raged with such fury affords proof of the profound interest taken in the lower animals. The veterinary surgeons of the United Kingdom have entrusted to their care, as medical advisers, something like three million horses, eleven million cattle, thirty million sheep, and four million pigs. The aggregate value of these it would not be easy to state, but a destruction or depreciation of ten per cent. of any of them would spell "ruin" for their owners. Even in ordinary times and under ordinary conditions the annual

loss of cattle and sheep caused by infectious diseases amounts to a big item; but it has happened within the last half-century, and may happen again, that some contagious disease may break out amongst our herds on such a scale as would amount to a national disaster. Those of us who are still in middle life can remember well the grievous losses entailed in this and many other districts of the country by the outbreak of Rinderpest in 1865 and 1866. An eminent authority tells us that in those two years the loss of cattle in Great Britain from the disease was about 233,000 head, the probable value of which you can calculate for yourselves. In the six years ending with 1860, it is calculated that in the United Kingdom more than a million herd of cattle died from Pleuro-pneumonia, the value of which would be something like twelve million pounds sterling.

It will be asked, What is the good of veterinary science if it cannot even now, near the end of the nineteenth century, prevent cattle falling a prey to dire diseases? With increased skill and greater scientific knowledge, the veterinary surgeon has to deal now with a new order of things. In former days the Murrain, or Cattle Plague, was chiefly introduced into countries by means of war. If I am right as to date, it was in 1870 the German army which invaded France introduced Foot-and-mouth Disease into it. Forty or fifty years ago the importation of living cattle and living sheep was absolutely prohibited. There was therefore comparatively little risk of the spread of infection from that source. Now, however, we are annually importing about 400,000 head of living cattle, and about a million living sheep. As we all know, any one of these imported cattle may any day become a centre of infection on its arrival here, and spread disease right and left, with such results as we have witnessed too often. Thus the problem now to be solved by veterinary science is infinitely more difficult than it was fifty years ago, and so much greater will be the honour of the man, or rather of the men, by whom it is solved.

To ascertain the stage which veterinary sugeons had reached fifty years ago, one should refer to the professional publications of that period. Here, for instance, in the *Veterinarian* for 1835, I find a Mr. B. consulting the editor as to whether or not he had properly treated a mare.

When he saw her on the 12th of October, he found her labouring under spasms of the intestines, which he concluded was caused by her having been partly fed on new straw. He treated her thus, as stated in his own words:—

"I abstracted blood, three pints and a-half (Scotch, seven quarts), gave three drachms of Barbadoes aloes in solution, and two ounces of tincture of opium. I fomented her belly, and threw up clysters, by which means the spasms became relaxed and the pain abated." Next day the mare was still suffering. He again abstracted blood, three and a-half pints (Scotch); gave five drachms of Barbadoes aloes in solution, fomented her belly, back-raked her, and threw up clysters very frequently. Gave afterwards, at three different times, one drachm of aloes in two quarts of tepid water. About 7 p.m. on the third day she was seized with a rigour or cold fit, during which he gave her two drachms of sweet spirit of nitre, applied friction to her body generally, and bandaged her legs, which were clay-cold; but a hot fit speedily succeeded, with laborious breathing, and the pulse rose to 80°, but was small. The labour of breathing soon went off, and the pulse rather increased. "I gave her two drachms of tartar emetic, and three drachms of nitre." Then, on the fourth day, the lungs appeared to be seriously affected. "I abstracted blood, one pint (Scotch, two quarts), blistered her sides, bandaged her legs, hooded her head, and endeavoured, as far as possible, to equalise the circulation. I then gave one drachm and a-half of digitalis, with two drachms of nitre. On the fifth day she appeared easier, but weak and without appetite. On the sixth day she was extremely weak; and on the seventh day she died. Eight pints (Scotch), or

nearly sixteen quarts (English), of blood were taken away during the six days' illness, and at each vivisection. I held my finger on the artery during the flowing of blood, watching the effect produced." The owner of the mare stated that Mr. B. had bled his mare to death, and Mr. B. naturally wished to know what the editor of the *Veterinarian* thought of it. The editor (whose initial "D" will be readily recognised by many old pupils) says: "I have no hesitation in saying that the patient referred to did not suffer from the bleeding; on the contrary, had I been consulted, I should have been much inclined to have taken away more blood. I doubt whether any treatment could have saved the mare." I have referred to this case in some detail because it may be taken as representative of the drastic remedies to which the last generation of veterinaries resorted. I refer to it for another reason—namely, to point out the possibility that, while the remedy of blood-letting may have been abused in former times, both as regards man and beast, it may be now too much neglected. My townsman, Dr. McDougall, recently contributed to the American journal of the medical sciences a remarkably able article on the remedial value of blood-letting. In this he points out that, when we recognise in blood-letting the power to modify the distribution of blood and to diminish pressure within the vascular system, then we are moving on such lines as are well fitted to guide us in its employment. That it does act as a derivative, that it is a powerful though dangerous sedative, and its employment facilitates the action of other remedies, is all possible. And although I believe that few would incline to employ it for such ends solely, its possession of such potentialities may render it of wider service than we anticipate when we use it. Harvey quoted these suggestive sentiments. I leave the question for the consideration of each of you.

So far as regards the systematic teaching of veterinary science, the present reign marks a remarkable advance. The farriers of the olden time were many of them sagacious men, and, so far as their knowledge went, they managed, in a rough and ready way, to render valuable aid to the stock-keeper. But no one, I hope, would dream for a moment of comparing them with the thoroughly trained veterinary surgeon of the present day. It is impossible to over-estimate the advantages which have been derived by veterinary practitioners, from the fact that during the last fifty years they have been trained in colleges and by men who have devoted their lives to the study of the science. It is almost a hundred years since the Royal Veterinary College of London was established, with St. Bel as its first professor. He, however, did not live long to retain the position, and he was succeeded in 1794 by Edward Coleman, who was Principal till his death in July, 1838. Few men have done so much for the profession as Coleman. In his time the College turned out many able men, including Field, Simonds, Gloag, Mayer, and Dick. In this connection it is interesting to note that among the four students who obtained their diplomas from the College on the 24th of April, 1837—just two months before the Queen's Accession—I observe the name of Mr. Joseph Carlisle, my esteemed partner, whom I may describe as the Nestor of veterinaries in the Border Counties, and who is now an honoured member of our Association. If you will pardon a slight digression, I may mention that shortly before that period there had been an Influenza among horses, and I find that in the *Veterinarian* of October, 1837, Mr. Carlisle contributes a useful article on the treatment of that disease. It was in 1844 that the Queen authorised the incorporation of the Royal College of Veterinary Surgeons, and declared and granted that the veterinary art as practiced by the members "shall be henceforth deemed and taken to be recognised as a profession"—a very distinct step in advance. A generation later—namely, in 1881—yet another step was taken towards raising the status of the profession. There were then passed, largely through the exer-

tions of Dr. Fleming, the Veterinary Surgeons Act, rendering it penal to assume the title of veterinary surgeon, or in any way to lead the public to assume that any but a member of the Royal College of Veterinary Surgeons, or practitioner recognised by it, is qualified to practice veterinary surgery or any branch of it.

No record of the progress of veterinary science would be complete which did not contain some reference to the work of William Dick, a pupil of Coleman's, who more than sixty years ago became the Professor at Clyde Street College, in Edinburgh, where, during the forty years he held that position, he turned out a host of able veterinarians. It has been noted as a significant fact that at the end of the year 1887 the principals of the three British schools, of the Army, of the two Canadian schools, and the President of the Royal College of Veterinary Surgeons, were "Dick's" men. And what of the future? What will the next half-century bring forth? Much has been done in the past; will more be done in the years to come? When we think of the rapid progress made by medical science in all departments during the last five decades; when we think of how much has been accomplished by Pasteur and Koch in other countries, and by Klein and Dr. Fleming and Williams, and a host of others in our own; when we think of the fact that in many cases the disease-producing germs have been traced; when we think of these things, we cannot conclude that science has reached its last and greatest achievement. On the contrary, we must feel that, with a continuance of patient investigation, with many eyes and many minds on the constant outlook for new facts and new methods, the next fifty years will see greater results than the last fifty. The time may come when, by the application of some simple prophylactic, the microbe itself may be robbed of its terrors. The young members of this Society may render material help in that direction. True, many may not be able to spend months at the microscope, watching the development of bacterial life; many may not be able, like Pasteur, to enter upon elaborate experiments for the attenuation of virus; but every one may contribute from his own observation and experiences some facts which may become all-important in future scientific research. There are other points on which I should have liked to have touched, but I feel I have already trespassed to much upon your patience. To sum up, let me say that never was it more important than now that the members of our profession should keep pace with the progress of science. On economical grounds alone, it is essential that the cattle and sheep of the farmer should, if possible, be prevented falling a prey to disease. Every head of cattle and sheep saved is an absolute saving to the nation. Let every one of us keep our eyes open for new facts and our minds open for new truths. Remember that we owe vaccination to the circumstance that Jenner accidentally heard it observed that dairymaids were not liable to Small-pox. Let nothing be thrown aside merely because it is old; let nothing be rejected merely because it is new. Take as your motto the three words—"Prove all things."

Professor WILLIAMS proposed a vote of thanks to the President for his very able paper. Mr. THOMPSON seconded the motion, which was carried unanimously.

Professor WILLIAMS then read a paper on "Quarter-ill," and inoculation as a preventive, which was very interesting and instructive, and was the means of eliciting an interesting discussion, in which most of the gentlemen present took part.

The CHAIRMAN then proposed a vote of thanks to Professor Williams for bringing before them that day such a very interesting paper, and kindly thanked him and Professor Lewis for attending the meeting. Mr. CARLISLE seconded the proposal, which was carried unanimously.

Mr. MACINTOSH proposed a vote of thanks to the Chairman, which, being seconded by Mr. DONALD, was also carried unanimously. The meeting then terminated.

The members and their friends then adjourned to dinner.

Amongst the friends present were Mr. Crowther (Mayor of Carlisle), Messrs. Watt, Ferguson, Dixon, Wheatley, Dr. McDonald, and others.

Dinner over, the usual loyal and customary toasts were given and responded to, and a very enjoyable and pleasant evening was spent.

JOHN ARMSTRONG, *Hon. Sec.*

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE half-yearly meeting of the above Society was held at the Bell Hotel, Norwich, on February 18th.

Present:—John Hammond, Esq., M.R.C.V.S., Bale, President, in the chair. Messrs. G. A. Banham, Cambridge; Thomas Greaves, Manchester; James Gooch, Holt; F. Golden, Marsham; R. Howard, Thetford; G. C. Hunting, Stalham; Kitchen, Norwich; Kidd; H. Newson, Beccles; J. B. Martin, Rochester; J. D. Overed, Blofield; Pollock, Norwich; A. H. Santy, Norwich; William Shipley, Yarmouth; S. Smith, Lowestoft; James Simpson, Maidenhead; F. C. Wragg, London, and the Secretary.

Letters of apology regretting their inability to attend the meeting were read from several members of the profession, including Dr. Fleming, Sir H. L. Simpson, Professor Walley, Professor Axe, etc.

After confirming the minutes of last meeting and receiving Treasurer's report, the election of officers for the ensuing year was proceeded with.

John Hammond, Esq., of Bale, Norfolk, was unanimously chosen President, and, taking the chair vacated by ex-president William Shipley, Esq., Great Yarmouth, conducted the meeting.

Messrs. William Shipley, R. Howard, and James Gooch were elected Vice chairmen.

The Hon. Secretary and Treasurer, Mr. R. S. Barcham, was re-elected.

Mr. BANHAM proposed that a vote of thanks be accorded to Mr. Shipley for the able manner in which he had carried out the duties of President during the past year, and for the great kindness and courtesy he had shown to all of them.—Carried unanimously.

Mr. Kitchen, of Norwich, Mr. Pollock, of Norwich, and Mr. James Simpson, of Maidenhead, were unanimously elected members of this Society.

The next place of meeting was arranged to be at Cambridge next July.

The Secretary was instructed to forward letters to Mrs. Robertson, Mrs. Carter, and Mrs. Wright, expressing the deepest sympathy of the members of this Society with them, in their recent bereavements.

The PRESIDENT next called on Mr. Wragg to read his paper "Remarks on Examination of Horses as to Soundness."

Mr. WRAGG then gave the members a short, lucid, practical essay, detailing those abnormalities which he considered constituted unsoundness. The best definition in his opinion for unsoundness was, "Anything which does at the present, or is likely to at some reasonable and future time, interfere with the usefulness of the animal." *Spavins, Curbs, Ring-bones, Side-bones,* Splints in whatever position found, etc., etc. were described, as constituting unsoundness; also *Vice,* if it interfered with the usefulness of the animal.

Indications of having been trephined, scars from having been operated on for Poll-evil, or Fistula Withers, he considered quite sufficient to reject a horse for, because, although at the present time healed, they may at any time have a fresh outbreak. After enumerating and describing many other abnormalities,

some of them with *post-mortem* specimens, which he thought constituted unsoundness legally, Mr. Wragg concluded his highly interesting and instructive paper by exhorting the members to use the utmost care in their examinations, pointing out that not only are our clients frequently wholly dependent on the opinion which we give, but that we as veterinary surgeons are legally responsible for any defects which we overlook, even, in his opinion, to those occult diseases which may be scarcely detectable at the time.

The discussion which followed was both lengthy and animated. It was opened by

Mr. MARTIN, who stated that, although legally he agreed with most of what Mr. Wragg had said, practically he considered it impossible to follow. If you reject every case of Splint, you would never pass a horse at all. He never rejected an animal for Splint, unless it was in a position to cause lameness at the time, or was likely to when put to work. Atrophy of the spinatus muscle, unless it interfered with the use of the leg, he did not consider constituted unsoundness practically, and although we ought to point it out to the purchaser, he thought we might confidently recommend the purchase of the horse. As to Side-bones, although legally unsound, he had seen many cases where animals so affected had done a great deal of work on the stones of London without any ill effects. Laminitis he considered one of the most objectionable forms of unsoundness, especially for city work. Curbs, when once formed, he considered of very little consequence.

Mr. GREAVES, after referring to the paper in high terms of praise, gave the result of his experience for over twenty years amongst horses in Manchester. Side-bones (unless excessively developed) in a foot which was good and strong, he considered of very little consequence; he had advised the acceptance of such animals in a great number of cases, and very seldom had he to regret that advice. Very few went lame, and he had watched some of them for ten years; and although running on the stones of Manchester with shoes calkined both heels and toes, the Side-bone had remained *in statu quo*. The horses which he never under any circumstances passed were those with thin low heels and thin flat soles; they would not stand town work for three months. Spavins, if not very large, and did not cause lameness, he did not consider of much importance, practically, in the horse. Cataract, although pointing out to purchaser, he never rejected in cart-horse. If in Manchester they threw out every horse that was technically unsound, they would never get half enough to meet the demand.

Mr. JAS. SIMPSON said that his experience of Side-bones was, that in the majority of cases they caused lameness, sooner or later. Split pastern, if not causing lameness, he did not consider unsoundness. He did not think that we were legally responsible for the existence of internal diseases not detectable during life.

Mr. SANTY described a peculiar form of unsoundness which he had frequently met with in cart-horses, viz., disease of the fifth inferior molar teeth. He considered it to be hereditary. Odd feet he had frequently seen produce lameness; he always rejected them as unsound.

Mr. OVERED considered Spavins most decidedly hereditary, and although many cases in harness-horses stood sound, he did not think we were justified in passing horses with them, or even recommending their acceptance by purchaser. Weaving and Fistulous parotid duct he also considered unsoundness.

The PRESIDENT, in concluding the discussion, said that although many of the abnormalities mentioned might not interfere for a very considerable time with the usefulness of the animal, still he thought that we could not be too strict in our examinations, or too careful in our advice to purchasers to

accept horses with unsoundness, be it ever so slight. The ordinary fee of 10s. 6d., he thought was far too small, considering the legal responsibility resting upon us.

Mr. WRAGG having responded to several questions, the meeting terminated with a cordial vote of thanks to the essayist and chairman.

R. S. BARCHAM, *Hon. Sec.*

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

THE annual meeting of this society was held in the London Hotel on February 22nd, Mr. Burnet, Maybole, presiding. The attendance numbered less than twenty. Before proceeding with the business, the retiring President referred to the loss which the profession had sustained by the death of Principal Robertson, of the Royal Veterinary College, London.

Principal WILLIAMS also paid a tribute to the memory of the late Principal Robertson, and it was agreed to minute an expression of regret at his death, and to extend their condolence to his widow. It was also agreed to send a note of condolence to Mr. Aitken, Dalkeith, on the death of his son, Mr. George Aitken, of the Army Veterinary Department.

Professor LEWIS, the newly-elected president, having taken the chair, Mr. CUNNINGHAM, Slateford, brought forward the following motion—"That the Society be dissolved, a small committee being first appointed with powers to sell or dispose of the effects of the Society, uplift its funds, pay its debts, and hand over the surplus to the Veterinary Benevolent Fund, in the hope that soon after the dissolution of the Society two other fresh Scottish veterinary associations will be formed." He suggested that, owing to the small attendance, the meeting might be adjourned, as he thought there should be something like a unanimous vote before dissolving the Society.

Principal WILLIAMS thought it was quite competent for any motion to come before the meeting, seeing that all the members had received notice of it. He would like, however, that the motion should be withdrawn, and that they should try to go on some time longer as they were, by an amicable arrangement.

Mr. CUNNINGHAM said he would be glad if an amicable arrangement could be come to, but he had no hope that could be brought about. The Society was formed twenty years ago, and it had fulfilled its mission for eighteen and a half years, during which its meetings were a source of pleasure and benefit to them; but for the last year and a half a change had come o'er the spirit of the dream. They were a divided Society, and there were among them members who would not be reconciled to their neighbours. His object was to wind up the Society in a quiet and friendly way, if possible, in order that room and encouragement might be left for the establishment of other societies. The only point on which he had a difficulty was as to the legality of the step which he proposed, but if the opinion was entertained that the Society could only be dissolved by a unanimous vote, he advised that they should hand over £20 of the funds, which amounted to £23 odd, to the Benevolent Fund.

Mr. CONNOCHIE seconded the motion.

The PRESIDENT thought it would be a great pity if the Society were broken up. If they could come to an amicable arrangement, he was of opinion that it would be better to withdraw the motion.

Mr. STOREY, East Linton, moved as an amendment that the Society be not dissolved.

Replying to Mr. Cunningham, the PRESIDENT stated that two gentlemen, the "disturbers," had resigned—Mr. Rutherford having sent in a letter of

resignation, and he took Principal Walley's verbal statement at last meeting as amounting to a virtual resignation.

Principal WILLIAMS thought that, after what they had heard, the best plan was to dissolve the Society and distribute the funds; or, as a compromise, they might adjourn the meeting for a fortnight to consider that matter solely. After some further discussion as to whether there should be an adjournment or a decision, Mr. Storey withdrew his amendment, and Mr. Cunningham's motion was unanimously adopted, a commitee being appointed to carry the resolution into effect. A vote of thanks was given to the office-bearers for their services during the past year, and the meeting terminated, the president's usual address not being delivered.

NEW VETERINARY SOCIETIES IN EDINBURGH.

THE unfortunate dissolution of the Scottish Metropolitan Veterinary Medical Society, due to disturbances, is to be followed, it would appear, by the institution of *two* societies on its ruins.

We are informed that on February 22nd, a meeting of gentlemen interested in the question of the formation of a new Veterinary Medical Association was held in the Royal Veterinary College, Clyde Street, Edinburgh, when it was determined that such a Society, under the title of the Royal Scottish Veterinary Medical Association, be formed, and that the object of the Association should be the discussion of purely scientific subjects. Professor Walley was elected President, and Mr. Archibald Baird, M.R.C.V.S., Secretary, *pro tem.* The necessary arrangements for the conduct of the Association were to be made at a general meeting to be convened on an early date.

On March 7th, in the London Hotel, a meeting was held for the purpose of forming a new Veterinary Medical Society. The following were present:—Messrs. Borthwick, Kirkliston; Connachie, Selkirk; Hutton, Kelso; Boyd, Kelso; Aitken, Jun., Edinburgh; Durkie, Dundee; Cunningham, Slateford; and Professors Williams, Williams, Jun., and Lewis, New Veterinary College, Edinburgh. The CHAIRMAN said that their old Society, after eighteen or twenty years' good work, and after one or two meetings which had not been very profitable, had been dissolved. He thought that this Society should be simply a practitioners' Society, unconnected with any college whatever.—Professor WILLIAMS said he thought that if the college element predominated it was very apt to lead to some dissension.—It was then agreed to form a Society to be called the Scottish Metropolitan Veterinary Medical Society, and the following gentlemen were elected as office-bearers:—President, Mr. Cornelius Cunningham; Vice-Presidents, Professor Williams, and Messrs John Borthwick and W. D. Connochie; and Secretary and Treasurer, Mr. Richard Rutherford.

ARMY VETERINARY ASSOCIATION.

THE Army Veterinary Association met on January 16th, when the subject of Soundness of Army Horses was discussed.

The question being such a large one, the Association propose discussing it at their subsequent meetings, and when completed the results will be published.

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of the above association was held at the First Avenue Hotel, Holborn, on Friday, September 30th, when the chair was taken by the President, Mr. J. D. Barford, of Southampton. The members present were Mr. E. A. Hollingham (Hon. Sec.); Messrs. Raymond, A.V.D.; C. Rutherford, A.V.D.; Rowe, London; J. F. Simpson, Maidenhead; F. W. Wragg, London; J. B. Martin, Rochester; H. C. Legge, Dorking; E. M. Rock, Chiselhurst; F.

Smith, A.V.D.; H. King, Tunbridge Wells; A. C. Piesse, Red Hill; W. Hunting, London; F. Warren, Hadlow.

Letters of apology for non-attendance were read from Messrs. L. Blake, C. Castle, T. Redford, H. J. Hogben, F. Knott, C. Hogben, and Sir H. L. Simpson.

The PRESIDENT having enquired whether any member had any morbid specimens to exhibit,

Mr. ROWE, the President of the Central Veterinary Medical Association, submitted a tumour which he had taken from a large collie bitch. He said that the animal had had no end of pups, and that the owner informed him that the tumour formed about three weeks since. From it he had removed two udders, and the chief feature was that it weighed three pounds and thirteen ounces, whilst the most extraordinary, perhaps, was that of all he had seen approaching an artificial heart, he never saw anything approaching it so near as this tumour. It was pendulous and had a very large base. The bitch was rather exhausted after the operation, but she was going on as well as could be expected. That was by no means the largest tumour he had removed from a bitch. The largest he removed was twice the size of the tumour before them, and the bitch recovered, but, lately, he heard that another was growing in another part of the body. The tumour before them was attached to one side more than another in consequence of the skin being puckered.

The PRESIDENT thanked Mr. Rowe for bringing such an interesting specimen, and observed that he had removed several tumours, one being some years ago whilst the animal—a large mastiff—was under the influence of chloroform, but it was not so large as that which Mr. Rowe had removed. He had not got the ecrasure then, and he removed the tumour with a knife in the ordinary way. A more satisfactory case under the influence of chloroform he never had, and the animal went on admirably well.

Mr. ROWE said that he did not use choroform, and should never do so whilst he had the power of both hands and could use them with celerity.

The PRESIDENT said that in his case the animal came to in a quarter of an hour. He did not make it a regular practice to administer chloroform unless it was a very special case.

Mr. HOLLINGHAM said that he performed a great many operations on dogs in the course of a year, and he invariably used chloroform. If any of them had failed in using it, he would recommend them to try again. It was, in his opinion, most satisfactory; at any rate, he had never had a death yet. He procured a tumbler and placed in the bottom some absorbing cotton. He put some chloroform on it, and then put the dog's nose into the tumbler, allowing sufficient air to penetrate so as to be able to move it. In that way he did not waste the chloroform, and got the dog under the influence of it in about three minutes. In cases where the eye was to be operated on, he failed to see how the operation was to be carried out without the animal being put under chloroform. As the question of operations had arisen, he might mention that he had a big case in hand, on which he should operate some time during the ensuing week. It was a case of Calculus in the urethra of a mare, and he proposed to get hold of with the spoonbill forceps and remove it in that way. It was firmly attached, and about the size of a duck's egg. It must be, of course, outside the bladder, in the urethra, and he should think it was about two inches from the neck of the bladder. Its presence was discerned in straining and the passing of bloody urine after exertion. He had known of injuries to the urethra in ponies being caused by boys or men forcibly pushing sticks in. He thought that was the case with the animal he had in hand, a splinter having been left in the urethra and become salted. The symptoms were very marked. The pony was a fast trotter and was driven by a lady, and when she pulled up, the animal stretched out and

passed a certain amount of bloody urine. It was evidently a source of irritation.

Mr. J. F. SIMPSON questioned the advisability of wasting time upon the subject of chloroform, which was a very wide one, and suggested that it should be adjourned, seeing that they had another very important matter to discuss. With regard to the removal of tumours, he should like to say for the information of those who had not had much dog practice, that the operation was not the formidable one it appeared to be. He had had several cases, and he agreed that it was not necessary to remove a large portion of the skin. After making the incision around the tumour and dissecting the skin backward, he found no necessity for the chain or anything of the kind. (Hear, hear.)

The PRESIDENT concurred with Mr. Simpson's views, and observed that in eight cases out of every ten the base was so small that the operation was far more simple than it appeared.

Mr. J. F. SIMPSON said he called to his mind a case he had two days previously. He was called to see a heifer which was roaming with others, and he came to the conclusion—probably a hasty one—that she had Laryngitis, for which he gave a blister to be applied to the throat. Some days afterwards it was reported that she was no better, and he made an examination, with the result that a tumour was found depending. It had a neck which could be taken hold of, but the tumour could not be torn off in consequence of the saliva making it slippery. It was a question to him how it was to be got off, because the ordinary chain and screw was not sufficiently long. He procured a piece of iron tube, through which he passed a piece of wire, and at the end he fixed his ecrasure, fastening the other end of the wire to the hook. His assistant put his hand to the heifer's throat, grasped the tumour, and, after passing the piece of wire to the other end of the tube, slipped it over the tumour, and he (Mr. Simpson) being at the other end, so to speak, got the tumour out. He mentioned the case because the chain had been called somewhat into question.

Mr. MARTIN said that his experience with regard to chloroform was quite opposite to that of Mr. Hollingham's, inasmuch as he generally found dogs very susceptible to the effects of it. In several cases it had proved fatal, facts which were calculated to disparage the profession. A little time ago he had a case of a dog swallowing a needle, which went through the back of the tongue. He prepared the owner for the worst, and gave the animal chloroform, but it killed it. He had such little confidence in it now, that he was half afraid of it.

The PRESIDENT said that very often it was a matter of quantity. He thought dogs required a very small quantity, and that sometimes they used a little too much.

Mr. HOLLINGHAM recommended the mixing of a little alcohol—spirits of wine—with the chloroform.

A Member confirmed Mr. Hollingham's views, and mentioned that on two occasions he tried to kill dogs with chloroform, and actually failed.

Mr. RAYMOND said that in many cases of operationsion human beings, the patient died under chloroform when the tongue was allowed to drop into the larynx, and he thought that that was often the case with dogs. He would strongly recommend, therefore, that the animal should be taken by the hind legs, held down, and his tongue pulled out. Death from chloroform generally commenced at the brain, and if the dog was held as he had indicated, and the blood allowed to gravitate, it would tend to stimulate the brain and revive the animal. He had seen cases of people put under chloroform, where it had been necessary for the surgeon to catch the tongue with the forceps, draw it forward, and allow the breathing to go on.

Mr. ROCK said he had occasion to attend a dog sometime ago which had had its eyeball dislocated three times in six weeks. He put him under chloroform, drew his tongue forward, and put an elastic band beneath it. Although he used a smaller quantity than on a previous occasion, and removed the chloroform immediately the animal was under its influence, to his surprise the breathing stopped, and he was unable to revive him by artificial means.

The discussion on the subject then dropped.

Mr. F. SMITH, of the Army Veterinary Department, Aldershot, then proceeded to deliver a lecture on

"THE RATIONAL TREATMENT OF SOME DISEASES OF THE LIMBS."

Dealing first with *Sidebones*, he said he held that lameness in Sidebones was not produced by Inflammation, but by the sensitive laminæ which covered the cartilage becoming squeezed between the living cartilage on the one hand and the unyielding wall on the other. The cartilage enlarged considerably, and, as a result, there was a considerable squeezing of the sensitive laminæ, which produced pain. Hence it occurred to him some four or five years ago to adopt another mode of treatment to that which was generally pursued. He said that if he could remove the pressure from the sensitive laminæ, he ought to remove the lameness. He first took a saw and cut through the wall of the foot in two places over the cartilage, and, in order to complete the separation, he divided the wall from the sole with a fine searcher. The next part of the treatment was to take the bearing off, put a bar shoe on, and send the horse to work. He was surprised to find that in a few days the case improved considerably, and he had been enabled to send the horse back to work sound in about three weeks. In his first case he had to repeat the operation some months afterwards, and he did so with satisfactory results. He might note, as bearing on the theory of this operation, that where they had a divided wall, all pressure was removed, and room was made for the cartilage to enlarge, and, as a consequence, they found that the wall grew down in a regular bulge. It fortunately happened that the number of cases of Sidebone lameness was not very great. Quite lately, however, he had had one or two opportunities of trying his operation, and he had induced others to try it also. There was always great difficulty in inducing people to adopt new methods of treatment; but the veterinary surgeons to whom he referred willingly tried his operation, and he was more than gratified with the excellent results they obtained. In one case a horse had been going lame for two years, and had a most undoubted case of Sidebones in both fore feet. He was condemned to be cast and sold; but, being operated on in the manner he had described, he was now going better than he had done for the last two or three years. By the aid of a model foot, Mr. Smith described his *modus operandi*. He said he generally used an ordinary hand-saw. The horse need not be cast, for the whole thing could be done whilst he was standing, and was absolutely painless. He never, if he could help it, drew a drop of blood. When he found the horse commenced to flinch he knew he had gone far enough, and then went on to divide, with a fine searcher, the wall from the sole. After the incisions were made, and before the horse went to work, he filled in the cracks to keep out the dirt. Many people laughed at the idea of the foot expanding, but he held that it did expand, and he would advise any one who doubted it to try the operation he had referred to. After filling up the cracks with hard soap until it was level with the wall of the foot, they should let the horse trot twenty yards, and then they would find that the soap had become quite squeezed out, showing that the foot in expanding had brought the two edges of the division together, thus squeezing the material out of them. The after-treatment consisted, as he had said, in putting on a bar shoe and sending the horse to exercise. In draft horses

the probability was that they would be less fitted by sending them to their work almost immediately. Operations and new methods of treatment for certain diseases were abused because people had an idea that they should meet every case. Many appear to forget that every case is a problem in itself, and what is suited to one is unsuited to another. He was prepared to hear that his operation of sawing through the wall of the foot had failed in certain cases, because they knew that one system will not meet every case; but he was sure that everybody who gave the operation a fair trial in suitable cases would not regret it. In recent cases of lameness, he believed it to be of great value, and he should be glad if those present would take an early opportunity of trying it.

Now, with regard to LAMINITIS and its treatment. The treatment, as laid down by Mr. Broad, of exercise, was undoubtedly correct, the explanation being that the exercise assisted materially in facilitating the circulation; but this he held—that cases of dropping of the pedal bone should never occur, and that the specimens in our museums of the bone appearing through the sole of the foot would in time to come be looked upon as a relic of barbarism. He believed they could prevent it by performing on the front part of the wall such a simple operation as he had described. He thought there was a great future in store for mechanical treatment of the feet, not only with regard to foot contraction, but also acute Laminitis, terminating in dropping of the pedal bone. In an acute attack of Laminitis, when the symptoms did not yield to the treatment by the third or fourth day, he thought there was every reason to believe that the integrity of the foot inside was likely to suffer, and that the pedal bone would put in an appearance. He thought that was the time to operate, and, instead of allowing the toe of the pedal bone to come through the sole, to deal with the wall of the foot at once. They knew that the wall would not give way, and the consequence was that the toe of the pedal bone became pressed down through the effusion. They should saw the front of the wall in two places, and, instead of allowing the pedal bone to come through the sole, they should allow the wall to bulge. Once they had removed that pressure they need have no fear as to whether the sole would become affected, and in course of time the wall would undoubtedly grow down to its natural shape. Had it occurred to them what particular part of the foot was affected in Laminitis? If they examined the foot in an early stage of the disease, they would find it was not the whole of the laminæ which became affected. The only part of the sensitive laminæ affected was that portion which extended around the toe from quarter to quarter. He had never seen the laminæ affected from the quarters to the heels.

The next point to which he would refer was the treatment of sprains. Of course in the army they saw a large number of cases, and they had opportunities of treating them which, perhaps, did not fall to the lot of the civil practitioner. Some years ago he had a case of severe sprain caused at tent-pegging. The horse was afterwards destroyed, and on examining the limb he found the whole of the fibres of the tendon dissected from each other by blood and serum, and he was much surprised at the amount of hæmorrhage which existed in the tendon. He thought that threw a certain amount of light on the treatment which should be pursued in such cases. The result of the hæmorrhage and serum was that the clots became organised and the fibres completely separated from each other, and thus placed in the most unfavourable position for union. As soon as he had a case of sprain he applied to the leg a bandage as tight as he could draw it, with plenty of tow underneath to prevent it cutting the leg. Next day he removed it and looked at the limb, and then applied the bandage again in exactly the same way, his object being to prevent further hæmorrhage into the structure of the tendon, dissection of the fibres one from another, and the thickening which generally remains. By

such bandaging they avoided to a considerable extent the great thickening which arose from the sprain of any tendon. He had adopted this treatment for some considerable time, and was satisfied that it was the best. When he heard practitioners say it was not a sprain of the tendon, but of the sheath of the tendon, he asked what part was affected. As far as his experience went, there was no synovial sheath at that particular part where horses became more often sprained than anywhere else; it was a misnomer, and moreover misleading, and he thought they should be more exact in their description of cases. He might appear to be finding fault, but he trusted they would not regard it in that light. As to dislocation of the patella, he was prepared to say that 80 per cent. of the cases were not dislocation at all. He did not believe there was the slightest displacement in the majority of cases. Let them take a horse which had been recently destroyed, turn him on his back, extend both hind legs, and press the muscles above the patella lightly, and they would find that the legs could not be bent. He regarded the majority of cases as spasm of the patella muscles. The rational treatment was to overcome this particular spasm. He certainly never blistered, but sent the horse to exercise as soon as he had reduced the phantom dislocation. There was nothing he regretted more than the many times he had applied a blister to the patella, and the loss of service which this occasioned. With regard to Lymphangitis, he was very dissatisfied as to the cause of it. He felt bound to accept the usual theory, but he could not see why the disease should settle in one hind leg and the fore-leg not suffer as well. He had only seen one case of Lymphangitis in the fore-leg. If they examined the leg of a horse suffering from the disease they would find an enormous amount of subcutaneous effusion, perhaps three or four inches in thickness, and also a considerable dilatation of the lymphatic vessels themselves. They had undoubted inflammation of the lymphatic vessels, with coagulation of their contents and consequent obstruction to the lymph stream. These clots are easily pulled out of the lymphatic vessels. They either got the lymphatic vessels permanently blocked as the result of this, or they had, which was perhaps the most common, an organisation of the fluid serum which is thrown out under the shin and between the muscles. Now he thought that hot fomentation was a little behind the times. If he had an ordinary case of slight Lymphingitis he applied a bandage to the leg as tightly as he could put it on, and then sent the horse to exercise. Although at first he might only walk on three legs, they would find after he had been out a short time he would get on much better. The explanation of this was that they facilitated circulation through the lymphatic vessels. He might add to his treatment a dose of physic, but he never used fomentation. If he had a very bad case, he should get away a fair quantity of blood by scarifying the limb. He was more anxious to get away the serum which was under the skin, as the longer it remained the worse were the chances of getting it away. If it was left it would become organised, and nothing they could apply would ever then reduce the leg to its normal size. After the incisions he applied an elastic bandage as he had described, and after the horse had stood for about twenty minutes the serum actually poured out through the bandage. By this operation he had had far more satisfactory results than by the other process. He had very few hind legs left enlarged; but if they were, they were not so large as usual, and he was perfectly convinced that by his mode of treatment his cases recovered much earlier than they would have otherwise done.

The PRESIDENT referred to the graphic nature of Mr. Smith's lecture, and observed that he opened up a new track, and gave them food for future trial.

Mr. HUNTING said that the difficulty which met him in making any remarks

on the lecture was that it was entirely original. Mr. Smith's treatment was so unexpected and new that one could only theorise upon it, and then they were met by the fact that Mr. Smith had already tried it; and found it successful. He told them that his treatments were rational; but if it could be shown that the treatment, or a part of it, which they already pursued, was not the cause of recovery, then it was for them to try the new experiment. He did not dispute that pain was greatly aggravated by pressure of the hoof in the case of Sidebones, but he should like to know how Mr. Smith accounted for variations in the lameness. As to treatment by means of rest, it was not uncommon to find three weeks' rest take away lameness in the case of Sidebones.

Mr. SMITH said that as a matter of fact he kept his horses at work the whole time.

Mr. HUNTING said that in some of the greatest cases of lameness, many of the oldest horses were absolutely free from pain. If it was pressure of the hoof which caused lameness, then Mr. Smith's treatment seemed to be rational; but he thought they might qualify themselves by asking whether the treatment itself might not be the cause of lameness. He was surprised to hear Mr. Smith say that the hoof expanded. If he meant in an outward direction, he (Mr. Hunting) stated exactly the opposite. There was no doubt that the back part of the foot did move downward, where they had the horn sufficiently elastic. He denied the expansion laterally, but acknowledged the downward movement of the hoof, which explained the pressure outward from the wall more logically than the expansion laterally. As to Laminitis and treatment by exercise, he did not accept Mr. Smith's treatment in acute cases. With regard to the dropping of the pedal bone, it was simply due to the exudation between the wall and the bone. He should not like to cut the wall with the idea of anticipating the protusion of the pedal bone through the hoof, but he would rather wait until he had a distinct reason to know that the pedal bone was coming through, and the symptoms by which he could expect it. In his opinion, by parting the wall they facilitated the descent of the pedal bone. With respect to sprains, he was utterly unable to follow Mr. Smith, because he had not made any *post mortem* examinations after recent sprains, and therefore he had not seen the effusion of blood. It was new to him to be told that the thickening of a broken-down tendon was due to the effusion of blood into it. If it was so, Mr. Smith's treatment might be good, but a difficulty existed in the time which might elapse before the case was seen. If the pressure was not applied during the first twenty-four hours, he failed to see how the pressure could act at all. By preventing the effusion it would cause much squeezing, and increase the pain. To be told that there was no sheath to the tendons seemed to be breaking down the anatomical faith of one altogether. With regard to Lymphangitis, they all used exercise in treatment, but he would ask how many of Mr. Smith's recoveries depended upon exercise, and how many upon pressure. The treatment by pressure seemed to him to be a little mechanical. The exudation in Lymphangitis was not merely fluid running into the limb, but fluid thrown out by vital process, and the exudation from vessels, he did not think, was checked by pressure. They had to find out the cause of the exudation. If it was in the lymphatic vessels, there was the cause at once. As to scarifying, it seemed to be purely illogical on Mr. Smith's part. He doubted whether the amount of fluid they could squeeze out of the superficial part of the leg through the opening made, and the awful pain caused to the horse by the elastic bandage, effected as much good as exercise and physic. He thought the pressure and scarifying were heroic kinds of treatment, founded on a too mechanical idea of the disease, and he was inclined, therefore, to stick to the treatment already adopted. He con-

tended that Mr. Smith's recoveries were due more to exercise than to scarification.

Mr. REDMOND said he knew to his cost that when cartilage became inflamed there was a good deal of pain. As to the treatment for Sidebones, he thought that cutting into the hoof in a recent case might have a good effect, and he should try it when he had an opportunity. Regarding Laminitis, he should like to know when they were to diagnose that the case would not require the treatment laid down by Mr. Smith, because it seemed an unnecessary operation if the animal was likely to get well without it. As to sprain of the tendon, he should imagine that a linen bandage would cause much pain; and as for the dislocation of the patella, he had noticed that when the leg went forward it went with a click. In some cases he had seen the horse put to exercise at once, and to his duty the next day. He thought there was something sound in Mr. Smith's treatment of Lymphangitis. If his theory of the lymphatic vessels becoming blocked prevented the lymph from passing upwards was true, it seemed feasible if they could get it to pass out in some other way. He never used pressure in commencing his treatment, but after the animal came back from exercise, and that, he found, prevented swelling recurring.

Mr. WRAGG did not agree with Mr. Smith's treatment for Sidebones, for, in his opinion, horses were seldom lame with them. As to Laminitis, he had treated in a similar way to Mr. Smith by sawing through the horn at the toe, and removing the horn all the way down until he reached the laminæ. He had done that several times, and had been very pleased with the results, because his cases recovered before descent of the pedal bone. He was not a believer in the expansion of the foot, nor in the exercise treatment, for he could not help thinking that when a horse was suffering excruciating pain it was an act of cruelty to have him exercised. He had had very little experience of dislocation of the patella; and as regarded Lymphangitis, he did not remember having seen it more in the hind limb than in any other. In his experience, horses suffered more pain when it was in the fore limb.

Mr. MARTIN thought Mr. Hunting had met Mr. Smith's theory with regard to pressure in Sidebones very satisfactorily. They had many cases of enlargement, only one of which, perhaps, resulted in lameness. He did not believe much in firing for Sidebones; he had found unnerving to be the most useful. He did not think the theory of the pressure between the bone and the horn was really the cause of lameness, because if it caused it in one horse, it would cause it in all others. In acute cases of Laminitis, it was pressure of the horn on the deposit which pressed the bone down, the removal of the pressure did not remove the deposit. He did not think anything would stop the deposit in acute cases, but in chronic cases they would find that the broad shoe and exercise was the best treatment. He looked upon Lymphangitis as a constitutional disease, and he knew the case of a stallion, three out of four of whose colts had large legs. He agreed with Mr. Smith as to dislocation of the patella.

Sir HENRY SIMPSON said it was all very well to find fault with their treatment of Sidebones when they had tried it. No one, he understood, seemed to favour Mr. Smith's treatment. They might have lost sight of the fact that lameness before pressure was caused, in the process of transformation. However, he was disposed to give Mr. Smith's treatment a trial. With regard to Laminitis, he was bound to say that it was only in his own infirmary that he treated by exercising. Good might result from it; but in nine cases out of ten in private practice, they got the character of being inhuman. *Post-mortem* examinations of horses that had had Laminitis had not been performed by him, but he was bound to admit that where he had

made examinations, the laminæ were not affected so much as he imagined they were. With regard to the effusion of blood on the fibres of the tendons, private practitioners did not get the cases in hand as soon as they occurred, whereas, in the service, a trooper or whoever had the charge of the horse was bound to report the case directly, and the veterinary surgeons in the army had better opportunities of observing the early changes which took place. He thought he had treated several cases of dislocation of the patella, which it was not uncommon to find in colts. It was evident they did not have a division of the ligaments, and he had seen colts and yearlings walk with little inconvenience. Altogether, he was inclined to think there were more cases of dislocation of the patella than they knew of, and he was surprised that London practitioners did not have more cases. Bandaging in Lymphangitis seemed to him to be a very rational mode of treatment.

Mr. HOLLINGHAM said he was inclined to favour Mr. Martin's view of the treatment of Sidebones. In Laminitis, the treatment by removal of the wall of the hoof seemed right theoretically, and in a suitable case he should not hesitate to try it. As regarded Lymphangitis, he had seen several cases in the country, and was of opinion that it occurred as frequently in the fore-leg as in the hind-leg.

The PRESIDENT said he should not like to let such a discussion close without making a few observations, and he thanked Mr. Smith heartily for taking the trouble to come among them. He had always been convinced of the immense advantages they received in inviting their friends from the army to come and relate their experiences and assist in their deliberations. (Hear, hear.) He wondered what their clients in the country would say if they were to cut away the wall of the foot as Mr. Smith had done. Whichever way the pain was caused, there was no doubt, if the Sidebone continued to grow and press the laminæ, if that pressure was removed, they would to a certain extent benefit. It was a singular thing that they never met without hearing of new ideas, which they could work upon in the future. His experience of Laminitis was that if the disease had existed four or five days, it was difficult to obviate the separation of the hoof or descent of the sole. If they did not see the case for the first two or three days, their chance of success in saving the foot was doubtful indeed. As to sprain of the tendon, he thought Mr. Smith's treatment very rational indeed. Lymphangitis was a common disease in the country, and no doubt due to the disordered state of the blood. Dislocation of the patella was a vexed question, but he could quite understand that some of the cases which they called confirmed dislocation might be due to weakness of the joints in fast-growing colts, and they might be mistaken in having a partial instead of complete dislocation. In conclusion, the President again thanked Mr. Smith for coming to the meeting at his invitation. (Applause.)

Mr. SMITH briefly replied, and a vote of thanks having been passed to the President for his able conduct in the chair, the meetings of the Association were adjourned till March, 1888.

CENTRAL VETERINARY MEDICAL SOCIETY.

A MEETING of the Council of this Society was held at the First Avenue Hotel, Holborn, on March 1st, 1888.

Mr. WRAGG, Vice-president, occupied the chair, and the following gentlemen were present:—The President of the Society (Mr. Sheather), Professor Axe, Messrs. Mulvey, Oatway, Raymond, Roots, Samson, Woodger, and the Secretary.

The minutes of the last meeting were read and confirmed.

Communications were read from Messrs. Gray and T. S. Price, M.R.C.V.S.

Professor AXE proposed "That the Secretary be instructed to write to the past secretaries of the Society, asking for particulars as to the instruments and other properties handed over by them to their successors in office, and that he further inquire as to the loans of the instruments and properties made by each secretary."

Mr. WOODGER seconded the motion, and it was carried unanimously.

Professor AXE then proposed that the Society take steps to secure a room for the purpose of holding its meetings, and for storing its properties, and that a committee be formed to consider the ways and means of acquiring a suitable place.

Mr. RAYMOND seconded this motion, which was supported by the PRESIDENT of the Society and by Mr. SAMSON.

Mr. WOODGER (the Honorary Treasurer) was doubtful if the Society could afford the necessary funds, but proposed the following gentlemen as a committee to report on the matter: Professor Axe, Messrs. Raymond, Roots, Sheather, and Wragg.

Mr. SAMSON seconded this, and the Committee was appointed, Mr. Roots kindly undertaking to act as its secretary, and it was arranged that three members of the Committee should form a quorum.

The SECRETARY then read two letters received by him from Mr. George Thatcher, solicitor, of Doctors' Commons, with reference to the registration of the Society under the Friendly Societies Act.

Mr. SHEATHER proposed, and Mr. ROOTS seconded, that the further consideration of the matter of the registration of the Society be postponed until the next Council meeting. This motion was carried, and the meeting then adjourned. SIDNEY VILLAR, *Hon. Sec.*

The following is Mr. Sheather's address on Splints, delivered 5th January, 1888.

GENTLEMEN,—In consequence of the unavoidable absence this evening of Professor Pritchard, I propose to introduce for the consideration of the Society the subject of "Splints." During the last three days I have mentally prepared some remarks on the subject, time not allowing of a written essay. The subject has come under my notice a great deal of late, and opportunities have occurred for making a great many *post-mortem* examinations in cases both of recent Splint and of old Splint. This subject is one which everybody knows a great deal about, and such subjects often yielded the best discussions. Splints, as they are commonly understood, are always deposits of bony material upon the surface of the cannon bone or the small splint bones, sometimes involving all, and sometimes only one. They have been classed according to their nature and position into Simple, Compound, "Pegged," and Carpal; this is of course more a clinical than a pathological classification, the pathological condition being the same in all or in most of the cases; that condition was inflammation of the bone or of the periosteum, which, from its close connection with the bone, led to the same results as inflammation of the bone itself. We have to deal with it mostly in young horses, and in such cases the disease frequently appears just at the time that the horses are first put to work. In my opinion these cases are, as a rule, cases more of Periostitis than of true Ostitis; they are usually of a benign character, and after the first deposit has occurred and the inflammation passed away they assume a passive state, and do not give rise to any lameness or trouble, unless the limbs become inflamed again from a similar cause to that which excited the disease at first. It is remarkable that horses often retain their soundness of action when they have extremely large deposits situated just below the knee and about the knee; such animals often worked for years;

while it is frequently the case that horses with very slight deposits are continually in pain in the region of the knee. Such instances have lately come under my attention in which horses have had to be destroyed because they did not get sound again. These animals belonged to people who put a very low value upon animal life compared with the pain which the animals had to undergo, and these cases had given him an opportunity of seeing the Splints *post-mortem*, when during life they were in an active state.

The Ostitis and Periostitis which gave rise to Splint might be divided into two stages—acute and chronic. The chronic was a very difficult one to deal with; the acute form ran through regular stages, of which veterinary surgeons were pretty well all cognizant.

One item of what he had to say that evening was to attempt to indicate a point in anatomy which would tend to show why the inner splint bone was generally more affected than the outer. It was generally said that the reason was because the inner splint bone was more under the centre of gravity than the outer; he had always thought that was rather a weak conclusion. If it should be stated that one part was weaker than the other part, they would be able to understand fully why the inner part should be affected more than the outer. If they took as an illustration a table with four legs, all of which were equally sound throughout, they would see there was no reason why the legs should split more upon the inner side than upon the outer. It was, however, found that upon the inner side of the cannon bone more Splints occurred than on the outer. It was very seldom that the inflammation of bone ran on to Necrosis; the inflammation generally caused a deposition of new bone, and there was enlargement. He once saw a case in which an animal had a great enlargement of the lower part of the outside of the cannon bone; in getting off a portion of this he discovered a piece of dead bone inside; this was removed, and after four months the callus again grew to a larger extent than before. That (Necrosis) was a danger which was not met with in Splint, but still there was such a degree of disease that the bone was totally altered in its natural circulation and never recovered its normal structure.

This was the cause to which he had alluded of those cases of continual lameness, in spite of treatment and rest; the result of the inflammation in one case of aggravated Splint caused a condensation of the cannon bone, and the closing up of the nutritive foramina, and hence the bone assumed an ivory-like appearance; the bone-cells were more or less encroached upon by the deposition of the hardened earthy material between them. When a Splint first appeared, a *post-mortem* examination would reveal a red gelatinous material beneath the periosteum; this became reddish-blue, and then swelled and became reddish-white, and finally white; and then it assumed the forms of soft cartilage, hardened cartilage, and afterwards soft bone; it then shrank somewhat, and the earthy materials were deposited, and the material assumed the character of real bone, with the difference that the blood-vessels and canals were very irregular.

The question of Splint was a very important one with reference to the soundness of horses, and it was a very difficult matter to determine what amount of Splint constituted unsoundness. It remained for the individual practitioner to give his own opinion upon each individual case; they would never get further than that. There was no doubt that large masses of bone might exist in the passive form without any effects whatever, while small masses might exist and produce much mischief—or rather, the mischief was produced by the inflammation, which kept recurring without much deposit, but which caused the horse to be useless.

It would be very interesting to put their finger upon the cause of the deposits about the limbs of horses; there was no doubt that hereditary

tendency played a very important part; perhaps from sixty to eighty per cent. of horses showed palpable disease of the limbs, and this fact almost proved that the disease was not caused by work alone; the enlargements grew symmetrically, and without pain, and almost as portions of the animal itself. They must conclude that there must be a tendency to disease in the system before the exciting cause was set to work. He held that the pace of the trot was a very important factor in the production of Splint. The trot was an almost artificial pace. The domesticated horse had been forced into a trotting pace to the exclusion of cantering and galloping. He believed that in a state of nature horses rarely trotted great distances. The observation of practitioners would tell them that the horses which were used for galloping paces did not suffer so much from Splint as trotting horses. The pace of the trot had this peculiarity in it, that alternately one fore-limb only took the force of the alighting body on the ground; when the right hind-limb, as they might say, propelled the body forward in the trot, the near fore-limb only took the weight, and the reverse took place on the other side; thus they had the weight of the body falling upon the ground wholly through one of the fore-limbs. In the gallop a leg might lead, but as soon as it reached the ground, the next so quickly succeeded it on the ground that the concussion was diminished, and there was not that excessive weight upon one fore-limb which there was in the trot. Another point to be noticed was the manner in which horses were shod. The farrier was a man who knew nothing about a horse's gait or action, or the way in which he put his foot down; the farrier treated the foot as level, and he put the shoe on level, and so the horse went to work again, only, perhaps, to wear his shoe away in some peculiar manner. The tread of the horse was ignored, and there was a strain thrown upon a part of the limb which the formation of the horse forbade to be exercised to that extent. The more horses were bred for fast purposes, the more frequent, as a rule, was the distortion of their limbs. Cart-horses were, perhaps, the most truly trotting animals we had, but the better the breeding the more distortion of the limb, and the twisting action came in, and with this came in an uneven action of the feet. This was ignored by those who shod horses. The animals were shod to make their feet look straight, and the fact was that a strain was unduly thrown upon some other part. Concussion was an exciting cause of the Ostitis and the Periostitis, which led to the growth of Splint. He believed that among other causes was external violence, such as brushing and bruising, although, as one might expect, this was not a very common cause; but the turning of a horse very suddenly at a trot might have the effect of producing the inflammation which led to Splint. He also believed that subsidiary to all these causes was the fact, that domestic animals were fed upon grain, the saline portion of which greatly consisted of phosphate of lime, and a great many drank hard water, which largely contained lime salts. These must supply their systems with the materials which were utilised in the growth of bony deposits, and they might account sometimes for the very large deposits which took place in such cases.

He would now pass to a point which he regarded as important in showing the reason why the inner splint bone should be more affected than the outer splint bone. He had brought with him an off fore-limb, and the lower row of bones of the knee. Of the three main transverse joints of the knee, two were ginglymoid—the carpal and radio-carpal; they were hinge joints, and there were no twisting or gliding movements; the lower articulation, the carpo-metacarpal, allowed a movement in a lateral direction, but only slightly. In analysing this movement, they would find that a rotatory movement of the os magnum upon the head of the cannon bone could only be effected in a direction towards the head of the inner splint bone, which has a

facet for articulation with the os magnum, and which resists the movement of the anterior and greater portion of the os magnum in the direction of the inner splint bone; the anterior portion of the articulation of os magnum with the large metacarpal is of a plane inclined downwards towards the inner side, facilitating a rotatory motion of the magnum, with its posterior process as a fulcrum or centre. To explain; if the horse wanted to turn to the near side and the off fore-limb was on the ground, the rotatory motion exerted upon that limb would be exercised upon the anthrodial rather than the ginglymoid, and the head of the inner splint bone would resist the impulse to twist by its articulation with os magnum. There was no resistance to its movement in the opposite direction, but the moment the slightest pressure, such as would occur at the sudden turning of the horse, was put upon it in the one direction, the tendency was to lift the small splint bone away from the cannon bone. He had no doubt that this was one of the causes why Splint was more common on the inner than the outer side. There was an inclined plane downward and inward on the head of the cannon bone, and, besides turning, any direct concussion would tend to drive the anterior of the os magnum towards the inner splint bone. The anterior part of the os magnum was kept in its place by the pressure upon the facet on the supero-internal part of the head of the inner splint bone, so that direct concussion alone, as well as suddenly turning, had a tendency to push the head of the inner splint bone away from the cannon bone, whereas no such pressure was exercised towards the outer side. He was not finding fault with nature in this respect; he was only in the same position as those who said that this part of the leg was more under the centre of gravity than the other, or that the inner splint bone received more individual and undivided pressure from above. He thought that when they come to consider that the horse was not intended to go upon the solid ground upon which we used him, or to wear an iron shoe, and that the adaptation allowed by soft ground was lost to him, and that he was not intended to trot, they would come to a rational explanation of the reasons for the existence of the disease, and also why the inner side was more affected with Ostitis and Periostitis than the outer one. He believed that this was, in a great measure, one of the causes of this peculiarity, and that although this theory may rather show a reason for strain of the inter-osseous ligament, yet that strain may be conveyed rather to the periosteum with which the inter-osseous fibrous tissue became continuous.

He need not keep them long with the diagnosis of Splint, because, as a rule, it was very simple. In young horses the peculiarity of gait, and the very great ease with which a tender point could be discovered with the fingers and thumb, were sufficiently well known. There was that difficult lameness which they sometimes got in older horses, and which passed under the name of Splint. Although the affection was more of a chronic and extensive nature, it was sometimes very difficult to deal with, because it was often complicated with similar disease in other portions of the bony structure of the limbs; this frequently occurred, especially in heavy barouche horses or carriage horses, and was attended with great pain. Also, disease elsewhere often caused an increased pressure upon the cannon bone, which gave rise to chronic inflammation, difficult to get rid of, and necessitating long periods of rest, and even then was not curable. He had not alluded to Rheumatism as a cause of Splint, for he did not recollect a case which he could fairly put down to Rheumatism. Rheumatism might have been a cause, but he failed to be able to give that diagnosis. He had some bones at home diseased in all portions of them, in which there was a rheumatismal diathesis, but he thought it was very difficult to assert that Rheumatism was the cause of the disease.

As to treatment, there was one point in which he differed from other

practitioners; in the case of young horses he was in favour of total rest where the splint was a first growth, or even a successive growth; but where horses were seven or eight years of age and there was found a little enlargement coming upon the site of an old splint, he believed that a total cessation of movement was not beneficial treatment. He had tried both plans, and had come to the conclusion that at least walking exercise should be continued in such cases; the main idea of the exercise was that the circulation would be maintained better than if the horses were allowed perfect rest. In the case of the horses which had worked hard from the fourth year to the seventh, and which had a pain in the region of the head of the cannon bone and the splint bone, and had grown little or no deposit, it would be found that if they rested entirely, they would never recover their soundness, and at last they would become useless. He had found that by treating them with walking exercise, and at the same time using other well-known remedies, he got greater success than when he allowed them perfect rest. In old-standing cases it was common to use blisters when the disease had not yielded to other treatment, and it was also customary to seton them. He found, in his own experience, setoning was the best treatment, but it was very difficult to give any regular rule as to what should be done. The larger the deposit and the greater indication the horse gave of bone disease, the less inclined he was to use the firing-iron. His own experience was that in such cases firing only increased the disease, without removing the inflammation which was the cause of the large deposit; in those cases he had found setons most beneficial. He always added another useful agent to those remedies which were used for the absorption of and for the treatment of Inflammation of Splint; that agent was oleic acid, which had great power of penetration. If an anodyne or mercurial compound was used with oleic acid, it would be found that there would be more effect than if those drugs were mixed with lard. He had found great relief from chloral and camphor with oleic acid. These made a very fine liniment, which penetrated to a great depth. Oleic acid was derived from palm oil by means of steam at a high pressure; the palm oil was resolved into oleic acid and glycerine. As an agent for adding to active drugs, it was one of the best to insure penetration. He had used it for eighteen months, and was fully satisfied as to its effect. In cases of acute pain it was a most excellent thing to use as an anodyne. There were other means of treating Splint which he had practised, but he could not say that they had been attended with any more success than the common treatment. Some time ago, at the instigation of a medical man, he operated upon a large Splint in a young horse; the animal was not lame. The medical man requested him to saw right through the Splint. He (Mr. Sheather) cast the horse and sawed down to the cannon-bone, and put a seton in and then left the horse. The result was a very large increase of the growth for the time being, and there was extreme density about the whole part, but, strange to say, the growth was absorbed gradually until the Splint became about half the size that it was when he put the saw into it. Whether this decrease arose from the sawing cutting off the greater portion of the nutritive supply he could not say. He had heard of another case in which a saw had been used, and the Splint had almost disappeared, but in this case the Splint was smaller and it occurred in an older horse. The readiness with which absorption took place in the case of older horses was remarkable. A frequent cause of the quack nostrums being successful, was that they were applied at a time when the system was ready to absorb bony deposits. The saw and chisel might be used beneficially in many cases, but they needed to be used with care. The owner ought to have notice that the use of these instruments might lead to a larger development than already existed. He should not hesitate to use the saw again in the case of an older horse with a

very prominent Splint, but he certainly should not use it with a more extended Splint.

Mr. VILLAR, in opening the discussion, said he felt sure that they would all be very grateful to their President for his kindness in coming forward at a short notice, and providing them with a very useful and very instructive subject for consideration. He thought that the theory which the President had brought forward as to the cause of the more frequent occurrence of Splints on the inner side of the leg was an entirely new one and a very clever one, and he had every reason to accept it. There was no doubt but that Splints were sometimes hereditary; he was sure that most of the gentlemen present had seen them in young, unbroken, and unshod horses, which was a very good proof that they were of an hereditary nature. He would like to ask Mr. Sheather whether when he used setons he also performed the operation known as subcutaneous periosteotomy. He (Mr. Villar) thought there was no remedy for old-standing Splint better than the budding-iron, but had found that in recent and acute cases linseed-meal poultices, medicated either with extract of belladonna or tincture of opium, were very beneficial.

Mr. SAMSON said that Mr. Sheather seemed to attribute the cause of Splint to trotting. He had no doubt that trotting had a great deal to do with it, but, in his opinion, it was the trotting upon hard macadamised roads. He believed that few horses showed Splint before they were taken upon such roads. As a proof of this Mr. Sheather had stated that horses which were kept for galloping purposes did not develop Splints. He agreed with that statement, and he did not think that half-bred horses would develop Splints if they were kept off the roads. He did not believe very much in the hereditary theory. He had found puncture firing the best remedy for Splint, and he used a much larger iron, and penetrated deeper than in other maladies. He had the iron as hot as he could have it, and pushed it through the periosteum down to the bone, and then applied a blister. In such a method of treatment there was not the fear of having an open joint, as there would be in a case of Spavin. They could go right through the small bone and into the cannon bone, and would not do wrong. After adopting this treatment for Splint the horse would require a long rest, and he felt this was the great secret, and was confident that in nine cases out of ten, in horses from three to five years of age, Splints would go away if the horses were merely turned out to grass and allowed a two months' run. When they were upon the cold wet ground the inflammatory action would abate, and all the bony enlargement would become absorbed. He once, at the urgent request of a client, a solicitor, performed the operation of sawing off a large Splint; as a result the horse threw out a bony growth four times as large as the former one, and he never became right afterwards. During his apprenticeship he knew two cases in which Splints had been sawn off, and he then determined never to remove a Splint with the saw without previously cautioning his client of the risks incurred by this operation. He found that the worst cases of Splint were usually incipient Splints—an incipient Splint could not be felt, but a little heat and tenderness could sometimes be detected; he thought that inter-osseous Splint would be a very much better name for this form of the disease; it is a bony enlargement which formed between the splint bone and the cannon bone, but there was not sufficient growth for it to be felt externally. He had found that in long and difficult cases of this form of the disease, the only plan was to put on a severe blister, and get the client to turn the horse away to rest. Time would do more than anything else.

Mr. MULVEY, after expressing the indebtedness of the Society to the President for bringing this subject forward, referred to the occurrence of Splint in thoroughbreds. He had had a great many of

such horses through his hands in the breeding studs, and his experience was diametrically opposed to that which the President had advanced. He had had Splints in foals from three or four months of age up to a year old; of course such animals had never been out of the paddock. As to older thoroughbreds, he knew two or three in particular, which had been on the turf, and had been brought back to the paddocks as brood mares with pretty considerable bony enlargements.

Mr. WRAGG said the subject was a very interesting one, but it did not appear to him to be one upon which there was much room for discussion. The President had raised the question whether horses having a Splint should be considered sound or not; in his opinion all Splints should be regarded as unsoundness, because horses of any age might go lame from Splint. The theory that trotting was the cause of Splint appearing on the inner side of the limb was new to him, and he would not then express any opinion about it; but they all knew the President would not bring forward a new theory without giving it a great deal of thought, and he had now backed up his theory with arguments which seemed to be unanswerable. He (Mr. Wragg) considered that setoning was the most efficacious mode of dealing with Splints, but he also liked to divide the periosteum covering the enlargement; he much preferred this method of treatment to the use of the firing irons.

The PRESIDENT, in reply, said that if no horse which was affected with Splint was to be considered sound, then there was perhaps only one sound horse in a hundred in existence. A young horse which had no Splint, and had been pronounced "sound," would very likely show Splint in the course of two or three weeks after going to work; there was no criterion that the horse would keep sound long. He had a perfect horror of a horse which had no Splint, because, sooner or later, he grew one; but he had not ventured to go into the question of soundness, because it was a very large one, and involved difficult points; what he had alluded to was practical soundness, and it was in reference to that, he said, that each case must be left to the judgment of the individual practitioner. The nature of the Splint with which a horse was affected would almost tell whether the growth was likely to increase; he thought that the shape of the animal's bones, and the existing irregularities afforded means of judging as to the probability of the disease becoming worse. Mr. Wragg had somewhat misunderstood him when he thought that he had said that trotting was the cause of Splint upon the inner side of the limb; this condition might be occasioned at any pace by any concussion or pressure being brought to bear upon the metacarpal bones. He had frequently performed periosteotomy and with success, but he was under the impression that there was a tendency to increased growth after it had taken place, and that if they cut the periosteum, the deposit would become larger, for the periosteum by means of pressure, restrained the amount of deposit, and it would even produce absorption. The operation relieved the strain upon the fibrous tissue, but at the same time it gave free license to the growth to increase to any extent. He did not want it to be thought that he regarded trotting as the only cause, but he believed that if a comparison was made between horses used in trotting and horses used in galloping, it would be found that the majority of the horses which were affected with Splint were the trotting horses. Those cases in which the disease appeared so early in thoroughbreds, as instanced by Mr. Mulvey, strongly supported the theory that the disease was of an hereditary nature; he fully believed in hereditary tendency, and he could not quite see how Mr. Mulvey's experience was diametrically opposed to his opinions. An exciting cause might bring on the disease, but in fact it was not always really required, for the affection seemed to come to horses while at rest and without pain. He remembered a horse growing a large Splint after two months'

rest in a loose box; strange to say, it was not lame in the affected limb. Mr. Samson had very properly remarked that the hard roads had much to do with causing Splint, but he and Mr. Mulvey differed about the occurrence of Splints in young horses and in galloping horses. He (the President) doubted if Splints in the case of young horses would disappear by simply turning them out to grass, but they might diminish in size. Mr. Samson had remarked on the difficulty of diagnosis in cases of incipient or interosseous Splint; this he (the President) considered was one of those lamenesses produced by the pushing away of the head of the inner splint bone by the os magnum; the inflammation so produced caused an immense deal of pressure, and a long-continued pain, which would not be produced by other causes. He had used the firing irons to old Splints, but he considered the treatment very ineffectual, and he had ceased to use it in such cases; in these cases he thought that the cannon bone was inflamed in its deeper layers, and that a seton kept in for some time had a much better effect than simply burning wounds, and allowing the dead tissue caused by the cautery to slough away. As to the application of anodynes, that was a point which he thought they greatly overlooked. It was very common to use a strong irritant immediately, but he thought that the use of an anodyne should precede it. It was surprising how quickly pain might be removed from Spavins and Splints by the use of anodynes in an oleic acid combination.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting and dinner of the above Association was held at the Grand Hotel, Manchester, on February 10th.

Present: J. B. Wolstenholme (President), Professor Williams, J. B. Barford, Charles Sheather, F. W. Wragg, H. Olver, Peter Taylor, Thos. Greaves, Thos. Briggs, W. Woods, jun., John Lawson, Alex. Lawson, T. Hopkins, S. Locke, W. A. Taylor, Chas. Phillips, A.V.D.; Phillip Deighton, H. Ferguson, A. M. Michaelis, J. Moore, H. C. Harrison, R. H. McKaith, C. Challinor, and the Secretary.

Of the sister profession were present: Professor Young (Owens College), Dr. Woodcock, Dr. Smith, Dr. Stocks, Dr. Harris, Dr. Redman, Dr. McLaren, Dr. Jones, Dr. Wolstenholme and Dr. Briggs; also J. Barlow, W. J. Hopkinson, A. W. Briggs, and H. Hall.

Apologies, regretting their inability to attend, were received from upwards of sixty gentlemen, including the Mayor of Manchester, Dr. Fleming, C.B., Major-General Sir F. Fitzwygram, Sir H. Simpson, Professors McCall, Walley, Lewis, Axe and Brown, Colonel Halifax Wyatt, Mr. G. H. Hale, Dr. Dreschfeld, and Dr. Mann.

The SECRETARY read the circular convening the meeting.

The minutes of the preceding meeting were read and confirmed.

In connection with a circular issued by the National Association, and with reference to the election of members of Council, Professor WILLIAMS said that he had noticed with extreme regret that Mr. Banham, Secretary for the National Association, had associated his name with his own in canvassing for votes. Professor Williams wished the Association and the profession to understand that he knew nothing of the matter until he received Mr. Banham's circular, and also that he objected to the National Association being made use of for any purpose of the kind, or as a lever for a political purpose. (Applause.)

The PRESIDENT proposed, seconded by Mr. PETER TAYLOR, that Mr. Thos. Greaves be the nominee of this Association for election to Council. Carried unanimously.

After some complimentary remarks from Mr. BARFORD relative to the valu-

able services Mr. Greaves rendered in the Council and to the profession, it was proposed by Mr. PETER TAYLOR, seconded by Mr. S. LOCKE, that the usual Election Committee be appointed, such committee to consist of the office-bearers, in conjunction with Mr. E. Faulkner, with power to add to their number. Carried unanimously.

It was proposed by the PRESIDENT, seconded by Mr. P. TAYLOR, that Messrs. John and Alex. Lawson be appointed Auditors. Carried unanimously.

The PRESIDENT then delivered the following address:—

GENTLEMEN,—I thank you very much for the honour you have done me in calling me to occupy the presidential chair of this, one of the oldest veterinary medical societies in the kingdom. I regard it as an earnest of the desire of our profession to encourage and to stimulate its members to greater earnestness in the advancement of our art, when young men and general practitioners are thus elected. In remembering the number of able presidents this Society has had, of men ripe in years and experience, I must confess to a feeling which formulates itself in the hope that the Society may not suffer in any particular during my term of office.

I particularly desire that our younger members will take every opportunity of noting cases of interest, and that they will favour us with all the clinical reports and specimens they possibly can.

I desire to extend the warmest welcome to those members of the Liverpool Association who have joined with us, and hope that our title of "Lancashire" will be as much justified by the distribution of its numbers as by the amount and quality of the work done.

In connection with the Liverpool Association, I feel that I cannot proceed further without paying a tribute of respect to the late Professor Robertson, who represented it in Council, but who also represented all that is best in every veterinarian; for he was well-read, of untiring industry, earnest in purpose and in manner, at the same time eloquent in the forum, and courteous to all. He was a pillar in the profession, an acquisition to the College of which he was principal, and a man honoured and esteemed by all. We deeply deplore his loss, and trust that his example may ever be before us.

With your permission, gentlemen, I now pass on to review some of the topics which interest us as veterinarians. Science is advancing with gigantic strides and with amazing rapidity. Not long ago it took from three to four months for news to travel from the far west of North America; to-day we have the spectacle of the editor of a London paper having three hours conversation with his special correspondent in Vancouver Island, with an interval of two minutes only between their intercommunications. By means of the telephone we are able to distinguish the voice of one we know, though distant for miles.

In the study of Biology it seems to me that the advance made is no less striking. The old theory of separate creation for each species of plant and animal has been left far behind, and that of evolution substituted.

Science and observation have produced a complete revolution in medicine. It was a great advance when the zymotic theory was put forward and accepted; but a wonderful impetus was given when Pasteur first clearly demonstrated the true phenomena of fermentation; for from that time to the present the study of micro-organisms has been adding discovery on discovery, until now we are able to differentiate a great number, of which some are harmless, whilst others are capable of producing definite and specific disease.

Surgery also has many achievements to record. Look at the years of life and usefulness which have been added by the perfection of ovariotomy alone. Note also operations on the abdominal cavity in general, with gastrotomy in particular. There is also great advance made in the ability of the surgeon to

locate brain and spinal cord disease, which he can demonstrate, and prove the utility of his knowledge by operations when necessary.

Quite recently we read that, by means of a new instrument—the endoscope—it is possible to introduce an electric light into the bladder, and to bring the whole of its interior and contents under the examining eye of the surgeon.

In the special surgery of the eye, wonderful progress has also been made, but I know too little of the details to be able to give examples.

The advance made by our profession is substantial and satisfactory. I have not been referring to collateral progress in order to institute a comparison, but that we may be impressed with the velocity with which the world of thought and science is moving, that we may bring its teachings to bear fruit in our own individual spheres of usefulness.

One of the means at our disposal for this purpose is to be found in medical societies such as our own, and upon this subject Dr. Finlayson, of Glasgow, made a most thoughtful and instructive address a short time ago.

He considers that a clinical and pathological society can be made to the qualified practitioner very much what college and hospital instruction is to the student; the truth of this to me seems self-evident. A newly-qualified practitioner must take means to keep himself abreast of the flowing tide of progress, or he will quickly sink to what is known as "routine" and "practical" in the worst sense of these words.

In the ever-increasing field of medical literature certainly there is one means to this end; but I hold that, as you cannot teach anatomy by books alone, neither is it possible to advance in pathology in the same way. One glance at a preparation, or a single examination of a microscopic section, will often be more instructive and impressive than an hour's dissertation by a master of language.

Not only should a veterinary surgeon strive to keep well up with science, but in his own department he should also endeavour to advance his profession, and in this direction a wide field of usefulness lies before him.

(To be continued.)

ROYAL AGRICULTURAL SOCIETY.

AT the monthly Council meeting, held on March 7th, Sir JOHN THOROLD reported that letters had been received from the Royal Veterinary College, agreeing to the conditions laid down by the Council, on which the grant of £200 is made to the College for the further development of cattle pathology; from Mr. Walker, of Oxford, accepting the appointment of Provincial Veterinary Surgeon for South Oxfordshire; and from other persons.

A vacancy having occurred in the list of Provincial Veterinary Surgeons, through the death of Mr. Henry Peele, of West Hartlepool, the Committee recommended that Mr. John E. Peele, of Durham, be appointed as the Society's Veterinary Surgeon for the county of Durham.

Professor BROWN had presented the following report:—

Pleuro-pneumonia.—During the first eight weeks of the present year there have been seventy-eight outbreaks of Pleuro-pneumonia reported in Great Britain, and 339 animals have been attacked. This is a satisfactory decrease as compared with the returns for the corresponding period of 1887, when there were ninety-one outbreaks and 465 cattle attacked. Of the outbreaks reported this year, 32 were in England and 46 in Scotland, and of the cattle attacked 151 were in England and 188 in Scotland. The counties in England in which most outbreaks have been reported are Kent (9) and Lancaster (8), or more than half the total number in England. In Scotland the disease has been most prevalent in Aberdeenshire and Lanarkshire; and in the former

there have been seventeen outbreaks reported, and in the latter thirteen, making about two-thirds of all the outbreaks in Scotland in those two counties.

Swine Fever.—There have been 649 outbreaks of this disease reported in Great Britain during the eight weeks ending February 25, and 3,604 swine attacked by it. Of the diseased swine, 1,958 have been killed, 1315 died, and 356 recovered.

Anthrax.—There have been thirty-five outbreaks of this disease reported in Great Britain during the first eight weeks of the year. Thirty of these were in England and five in Scotland. The number of animals attacked by this disease has been 119, of which seventy-four were in England and forty-five in Scotland.

Professor BROWN stated that a letter from the Leicestershire Agricultural Society had been read at the meeting of the Veterinary Committee, calling attention to the necessity for uniform action in regard to the slaughter of animals suffering from Pleuro-pneumonia and Swine Fever. He thought he might venture to say that there had been a meeting of the Privy Council, at which it was resolved to issue an Order, but he was not in a position to say what this Order was.

Lord EGERTON OF TATTON said that he had to report that, as arranged at the last meeting, the President and himself had had a short interview with the Home Secretary. Mr. Matthews had requested him to state the case in writing, which he had accordingly done, and had also forwarded at the same time a published account of the experiments conducted at Hodnet. No answer had yet been received beyond a formal acknowledgment of the letter. There were three points which had arisen:—(1) Whether inoculation experiments which had been carried out by the aid of any virus whatsoever were experiments within the meaning of the Act? (2) Whether, if the experiments relating to Swine Fever which had been conducted by Professor Brown in the country had been carried out by ordinary practitioners, a breach of the law would have been committed? (3) Whether the placing of animals in contact with diseased animals for the purpose of testing the validity of the inoculation was an infringement of the Act? He (Lord Egerton) had also asked the question, "When would a veterinary operation cease to be an experiment, and if performed on a large scale in the field or on the farm, whether such an operation would come within the meaning of the Act? If such were the case, all improvement in veterinary science would be stopped, because his experiments were not experiments in the technical sense. They had been tested abroad, and he had sufficient faith in them to trust fifty animals to this system of inoculation, with a view of ensuring them from an attack of Quarter-ill. So far as he could gather from a discussion which had arisen on the subject in the House of Lords, his experiments did not come within the meaning of the Act, but if it should be found that they did, then it would be necessary to consider what steps should be taken to safeguard the interests of agriculturists in this matter.

THE MELBOURNE (AUSTRALIAN) VETERINARY COLLEGE.

ON January 17th a number of gentlemen met at the veterinary college of Mr. Kendall, M.R.C.V.S., in Brunswick Street, Fitzroy (not far from Victoria Street), to take part in the opening ceremony of that institution. A brief inspection of the premises before the opening ceremony was sufficient to make one aware of the completeness of the arrangements for the treatment of sick or hurt horses and dogs, etc. Nearly all the stalls were occupied by animals getting cured, and the dog-kennels were nearly all tenanted by "patients." The place is the only one of the kind in the colony, and now that its benefits are becoming widely known they are much sought after by

those who have sick or injured animals. The principal is Professor Kendall, M.R.C.V.S., and the lecturers are as follow:—Anatomy of the horse and other domesticated animals, Professor Rivett, M.R.C.V.S.; physiology, Dr. J. F. Joyce, M.D.; histology and the use of the microscope, Professor Kendall, M.R.C.V.S.; chemistry and botany, College of Pharmacy; pathology, Professor Kendall, M.R.C.V.S.; hospital practice and clinical instruction, Professor Rivett, M.R.C.V.S.; operative surgery and obstetrics, Professor Kendall, M.R.C.V.S.; materia medica and toxicology, College of Pharmacy; therapeutics and dispensing, Professor Rivett, M.R.C.V.S. The college has just been established, and already there are a fair number of students. At the opening ceremony of the college yesterday afternoon, Mr. Colville, secretary of the Central Board of Health, presided in the absence of the Hon. J. L. Dow, who was unable to be present. Apologies for non-attendance were received from His Excellency the Governor, Baron von Mueller, Mr. Blackett, Mr. Shillinglaw, and others. All of them expressed their warm admiration of the undertaking, and the benefits that would accrue from it.

The CHAIRMAN opened the proceedings, and called on Professor Kendall, who delivered the inaugural speech.

THE INAUGURAL ADDRESS.

Professor KENDALL said: The occasion which has brought us together to-day is one of more than ordinary interest, not only to stock-owners, but to the general community. Australia has already become one of the largest stock-raising countries of the world, and there remains ample scope for future developments and possibilities. It is therefore of the utmost importance to the future welfare of the country that we should endeavour to attain as high a degree of excellence as possible in all classes of live stock. But every one who has any practical knowledge of the matter is aware of the difficulties to be met with in attempting to improve the different breeds of stock, and also of maintaining any given standard of excellence. Not only have we variations of soil and climate to deal with, but a variety of conditions which constantly tend to a deterioration in size, form, and quality, and to an increased liability to hereditary and other forms of disease. As a field for the study of comparative pathology, few countries offer greater advantages than this. Prior to its being settled by Europeans it contained none of those animals that have been domesticated and have become the inseparable companions of civilised humanity; consequently, their comparatively recent introduction enables us to distinguish pathologically variations due to climatic or geographical causes. Many of the diseases from which our animals suffer differ in no material respect from those of the same character produced by similar causes in other countries, whilst others appear to be considerably modified in character and intensity from climatic or other reasons. Others, again, may be termed indigenous to the country, and are not met with elsewhere. Many of the latter are as yet but little understood, so that there is now an open field for a number of well-trained men, to say nothing of future requirements. As the country becomes more densely populated, and additional restrictions are placed upon animals by the further subdivision of pastoral lands, diseases are sure to increase in prevalence and variety, and the need for veterinary surgeons will become still more urgent. In the field of therapeutics there is much room for investigation. Already many valuable medicinal plants have been discovered, and I doubt not there are dozens of others amongst our native flora that only require a series of well-conducted experiments to test their effects upon animals in order to prove them to possess great therapeutic value. This is essentially the veterinarian's province, and it is to be hoped that some of you gentlemen who enter upon your course of study to-day will acquire an aptitude and liking for this kind

of work, and ultimately become specialists in it. The chief aim of veterinary science is, or should be, the prevention of animal diseases, and, I might also add, many of the diseases incidental to human beings which are due, either directly or indirectly, to the animal food we eat. The sooner this is generally recognised the sooner will the teaching of veterinary science receive the appreciation its importance deserves. The prevention of animal diseases is a matter which rests to a great extent with stock-owners themselves, and one of the main objects of this establishment is to give sons of stock-owners and others who intend following pastoral pursuits an opportunity of acquiring practical as well as theoretical knowledge regarding the causes and nature of animal diseases that will enable them to select sound, healthy animals to breed from, and to readily detect any deviation from health in the animals under their immediate care, and discover the causes which give rise to it. Animals, as well as human beings, have a language by which they can express their wants and desires, pains and pleasures – a language which is superior to our own, in that it contains no lie. It will be one of the most important parts of our duty to teach you how to interpret this language, so that you may be able to attach the correct meaning to the various expressions it contains. Those of you who intend following the calling of veterinary surgeons will find that your future will depend to a great extent on the facility and success with which you can diagnose the various diseases of animals. It has often been said that it is more difficult to determine the character of a disease affecting an animal than in the case in human beings. This I hold to be contrary to fact. Whatever information we are able to obtain from the symptoms expressed by a sick animal may be relied upon as being real and truthful. Animals, unlike human beings, seldom dissemble, and are not influenced to the same extent by imaginary complaints. Our difficulty does not rest with the animals themselves, but with the grooms, drivers, or others in attendance upon them, who, to cover some error or fault of their own, are prone to throw us off the right track as to the cause or character of a disease or injury, so that information obtained from this source has often to be taken with great reservation. I believe it is now the custom in several of the Continental schools to teach medical students how to diagnose animal diseases before allowing them to practice on human beings, and there has recently been some agitation in England in regard to adopting a similar method of teaching. To an unprejudiced mind there can be no doubt about the beneficial effect of such a training upon the students, as it must tend to a higher development of the perceptive faculties, and to less dependence being placed on what a patient has to say about the complaint from which he suffers. I heartily congratulate those of you who have joined these classes with a view of qualifying as veterinary surgeons. To those who have a love and regard for the lower animals there can be no more congenial occupation than to attend them in their sufferings, and being directed by their mute appeals to a correct understanding of their wants, and to be able to alleviate their pain and restore them to health and usefulness. It has often been said that animals are not worth doctoring in this colony, and that it is cheaper to destroy them and replace them by others. The records of the hospital in connection with this institution show, to the credit of owners, that it is not the money value of a horse or other animal alone that induces them to place it under professional treatment. A wealthy man may lose a horse and think little or nothing about his loss, but the man whose horse has been earning him his living, perhaps for years, does not allow it to suffer and die without making an effort to have it restored to health, and in the majority of cases he is rewarded for his trouble. While we are compelled to admit that up to the present veterinary science has made but little progress in Australia, there is every reason to believe that there is a much brighter prospect in the future.

We have to congratulate ourselves on the improved status given to the profession by the Veterinary Surgeons Act of 1887. The public will now be able to judge us on our merits as veterinary surgeons, and no longer have their opinions influenced by the conduct and abilities of a number of men practising under assumed titles. The four years study which the Act prescribes before you will be eligible for your final examination, which is a longer period than that enforced in the colleges of Great Britain, should be a sufficient guarantee that the status of the profession will not suffer at your hands if you only avail yourselves of the opportunities that will be given you of gaining both theoretical and practical knowledge. During the whole of the period you will have the benefit of seeing an extensive hospital practice, which in number and variety of cases is equal to that afforded by any of the British veterinary schools. In theory your attention will be first directed to what may be termed your preparatory studies. On three mornings in each week. Professor Rivett will lecture on anatomy, commencing with the skeleton, whilst it will be my duty to lecture on the soft structures of the body. For chemistry and botany you will be required to attend at the College of Pharmacy, where every facility is given for a thorough training in these important subjects. Dr. John F. Joyce, whose high scientific attainments are well known, will lecture on physiology and histology, both of which you will find of great value at a later period of your studies. Your more advanced studies at the College of Pharmacy will embrace materia medica, pharmacy, and toxicology, and at the institute you will be instructed in pathology and veterinary medicine and surgery, including the diseases of the horse and other domesticated animals. It is probable that at a later period of your course other teachers will be added to the staff, and the curriculum be made as complete as that of any similar institution in the world.

Professor RIVETT addressed a few remarks to the students, and moved a vote a vote of thanks to the chairman, who, in responding, expatiated on the incalculable benefits of the college.

Notes and News.

TOORKMAN HORSES AND HORSE MANAGEMENT.—The Toorkmân of Oorganj (Khiva) are wanderers, living in felt tents. . . . A Khokandee who had travelled among them gave me a long account of the wonderful endurance of the Toorkmân horses, and of their power of flat-jumping, over water, etc. They fetch very high prices, and are so valued that a foal is often bargained for before it is born, if of a well-known strain. "Toorkee horses are taken immense care of and well groomed, but their treatment differs from ours in some particulars. The saddles are never taken off night or day, but covered over with the horse-clothing, which extends to the head and neck. They are walked about for a great part of the time that they are not on the road, sometimes for four or five hours after coming in. Even the commonest horses are tied up, and not allowed to feed indiscriminately. They get plenty of corn (barley or Indian corn), and but little grass. This makes them very fit for long journeys." "Yarkand, May 14th, — I do not think that I have yet described the Toorkee manner of treating horses, which differs in many respects from ours. As a rule, they are kept saddled and tight girt both by day and night, and many Toorks will not allow their horses to lie down at all; saying, that if they do so, the corn settles in their legs and feet and makes them lame! So they tie them up short by the head. At the beginning of the day's march, before the sun is high, they are allowed a full drink of water at the first stream, but are given no more during the day, or until they have been in several hours. On coming in from a journey or ride the horses are first

walked up and down for two or three hours by small boys, after which, without unsaddling them, or even loosing their girths, they are covered up from head to tail with several thick horse-cloths, even in the hottest weather, and tied up as I have described, merely taking the bits out of their mouths, but leaving it hanging under their chins. After some hours they are taken to water, and a little hay is given them, and afterwards their corn; but unless it is still early, they are not cleaned till the next morning, as far as I have observed. At any rate, they are not touched till at least five or six hours after they have come in. In cleaning, a curry-comb is used, but afterwards, instead of a brush, they employ a small broom of twigs similar to the birchen switch, formerly so familiar to schoolboys. With this they switch the horse all over by quick motions of the wrist; first of all the reverse way of the hairs, and then the proper way. This little instrument is most effective, and leaves the horse with a beautifully clean and glossy coat. The Toorks are most particular about this, thrashing their grooms heartily if they detect the least neglect. The master will often test the cleanness of his horse with the cuff of his white under-robe or shirt. He wets this a little, and rubs the horse's coat; nothing will satisfy him but to be able to do this without leaving the least mark on the white sleeve. As a rule, horses here are not shod except for journeys in the mountains. But I need not say there are no macadamised roads to batter their feet, the whole country, roads included, being very soft earth, ready to fly into dust."—*Shaw's High Tartary, Yarkand, and Kashgar.*

Protective Inoculation for Hydrophobia.—The Sanitary Council of the Department of the Seine received at its last sitting a very interesting report on the cases of Hydrophobia which had occurred in Paris during the year 1887. Nine deaths from the disease had taken place, which is more than the number of fatal cases which occurred in 1880, 1883, 1884, and 1886, and equal to those of 1882. Of the nine persons who died of Hydrophobia in 1887 five were children under fifteen years of age. It is important to note that of the nine people who succumbed in Paris last year to Hydrophobia, only two had been treated by M. Pasteur's methods, and even those two had not properly followed the treatment. One of them, a man, was a drunkard, who continued to drink and interrupted his treatment during five days. The other was a woman living at a long distance from the laboratory, who, owing to her occupations, could not come, as she ought to have done, twice a day to be inoculated. As for the Pasteur Institute, it treated 306 persons bitten in Paris by mad dogs or animals supposed to have been mad. On the other hand, forty-four persons are known to have been bitten by dogs supposed to be mad, and not to have been treated at the Pasteur Institute. Of these, the seven people mentioned above as among the nine who succumbed to Hydrophobia in Paris died. Thus, of forty-four persons not treated by M. Pasteur's methods seven died, which is a mortality of close on 16 per cent.; whereas among the 263 persons bitten by animals proved to be mad and treated at the Pasteur Institute, the mortality was not more than 0·67 per cent. M. Dujardin Beaumetz, the vice-president of the Sanitary Council, said that, in presence of this result, it was the duty of the council to use every means at its disposal to favour the practice of inoculation against Hydrophobia.

Stray Dogs in London.—During the month of February, 1,173 stray dogs were taken by the Metropolitan Police to the Dogs' Home at Battersea. Four dogs were killed, three by the police and one by a private individual; but only one of these was certified by a veterinary surgeon as suffering from Rabies. Thirty-nine persons are reported to have been bitten by dogs during the month.

EXTRAORDINARY HYDROPHOBIA.—Hydrophobia is reported to have attacked a number of people who had eaten the flesh of a pig that was supposed to have died of Rabies, in county Leitrim, Ireland. A farmer treated them and they all recovered. The absurd story would not deserve narrating, had it not caused much excitement, and been believed in by persons who ought to have known better, and who made public their ignorance and credulity.

VETERINARY HONOURS.—At the meeting of the Société Centrale de Médecine Vétérinaire, on January 26th, Mr. Robinson, F.R.C.V.S., Greenock, was elected a Foreign Correspondent.

STATE SUPPORT OF VETERINARY EDUCATION IN FRANCE.—Nearly the whole of three sittings of the French Chamber were recently devoted to the discussion of the Budget of the Minister of Agriculture. The sums for the various services composing what is termed the "direction of agriculture," have been voted, and we learn the sums which Veterinary education costs France. For the Staff of the Veterinary Schools, 432,800 francs (£17,312); material for these schools, 566,000 francs (£22,640); making a total for the year of £39,952. For services in connection with the suppression of cattle diseases, 157,800 francs (£6,312); indemnities for slaughter of animals, 460,000 francs (£18,400).

Correspondence.

ELECTION OF MEMBERS OF COUNCIL.

SIR,—The time is fast approaching when members of the Royal College of Veterinary Surgeons will be called upon to elect seven members to serve on the Council Board, one to fill the vacancy caused by the lamented death of Professor Robertson, and the other six which occur in the regular course. I desire to draw the attention of my professional brethren to the desirability of making a change in the constitution of the Council Board. At present there are no fewer than nine Examiners who are also Councilmen, and there are several other Examiners who are candidates at the ensuing election for seats at that Board. Events have occurred within the past eighteen months which, in my humble opinion, render it imperative that no Examiner should have a seat at the Council Board. I believe, and I have on several occasions given expression to that belief, that it is impossible for a man to act impartially in the double capacity of Examiner and Councilman. The Examiners owe their *lucrative* appointment to the Council, and they ought to be the best men *in the profession*. Their duty is to admit men into its ranks, after satisfying themselves that the candidates possess the necessary qualifications, and present their report of the result of the examinations to the Council.

The Council being the governing body of the profession, should, in my opinion, be composed of men who have the best interests of it at heart, men who have an intimate knowledge of, and aptness for conducting its business, and men who will, without fear on the one hand or favour on the other, consider and manfully decide and act to the best of their judgment on every subject affecting the profession.

I heard an Examiner say at a public meeting that the Council was bound to listen to the Examiners, that they should be compelled to uphold them, etc. Bearing in mind what has taken place within the period already mentioned, it is clearly demonstrated to my mind that this dictatorial spirit has had the effect of preventing freedom of action on the part of the Council.

It has been frequently argued that when once a man gets a seat on the Council he ought to be re-elected on the ground of him being a tried man. Well, I do not see any objection to this, provided he has consulted the best interests of the profession, and provided he is not an Examiner.

So far as I am aware, there are only three "plums" in the profession, and I do not think any man should have the lot. The Examiners have the best plum in being well paid for their work, and thus they ought to be content. The Council have the next plum, in having the honour of legislating for their brethren; and the profession has the smallest but most important plum in having the privilege of electing those to the Council Board who will best study their interests. I have heard it said that the Examiners cannot be turned out. I do not suggest that they should be turned out *in a body;* they ought to have the privilege of deciding whether they can best serve the profession as Examiners or Councilmen. If they decide to remain the former, then I suggest that we fill their places by electing men who are not Examiners as their respective term on the Council expires, and in this way there would be no need for the board of appeal which Mr. Greaves thinks is necessary. I disclaim any hostile feeling to the Examiners or any one of them, but I am convinced that it would be to the best interest of the profession if the Council and Examining Boards were separate and distinct. I have been told that I am inconsistent in my appeals to the profession because I took up "Clause ix." and nothing came out of it. I do not see where my inconsistency is, because I am of the same opinion *re* that clause, and I am not without hope that the day will yet come when it will be rescinded, as it retards the advancement of the profession. I intend taking the same course with the question I have raised, viz., leave it with the members, for it is with them that the successful issue rests, and it is with them I leave it, for I am sure no good end would be attained by an individual member constantly harping on one string. H. KIDD, F.R.C.V.S.

Hungerford, *9th March*, 1888.

ABNORMAL POSITION OF THE ŒSOPHAGUS.

SIR,—I notice in the January number of the Journal some remarks on the "Abnormal Position of the Œsophagus." I recently noticed a case in one of our hospitals, in which the balls that were administered passed down the right side of the neck, much to the amusement of our head groom. We rarely give drenches, and this is the first instance I ever saw, and we use about 2,000 balls per annum.—I am, sir, very truly yours,

Albany, New York. EDWARD MOORE, M.R.C.V.S.

CHOREA AND SHIVERING.

DEAR MR. EDITOR,—May I be permitted to ask your advice on the following:—

I last week examined a mare as to soundness, and found her to be what is commonly known by horse-dealers, etc., as a "Shiverer." On my certificate I certified that the mare had "Chorea," and consequently was unsound. A neighbouring veterinary surgeon, on seeing my certificate, said that it was wrong, that "Chorea" was not a disease of horses, but was seen only in dogs.

Would you oblige me by saying in your valuable Journal whether or not I was wrong in using the term "Chorea," instead of the coper's term "Shiverer"?

JOCO.

[Chorea may affect all animals, but is most frequently observed in mankind

and dogs. The morbid condition to which the unscientific name of "Shivering" has been given is not Chorea, though that disease is sometimes observed in horses.—ED. *V. J.*]

THE LATE PROFESSOR ROBERTSON.

A meeting of the students of the Royal Veterinary College was held in the theatre of the college on January 18th, for the purpose of taking steps to raise a memorial to the late Professor Robertson. Professor Axe presided, and after referring to the many excellent qualities of the late Principal, and his untiring devotion to the interests of the students, called upon those present to suggest the form they were desirous the memorial should take.

After some discussion it was resolved to place a marble bust of their late lamented teacher in the museum of the College. A committee was then formed, comprising students from the several classes to consider and report upon the best means of effecting the object in view.

A subscription list was then opened amongst present and past pupils of the late Principal, and the members of the profession.

The donations are not to exceed half a guinea. W. J. Moran, M.R.C.V.S., is hon. sec.

THE DISCUSSION ON THE PATHOLOGY OF "SURRA."

SIR,—Mr. Steel has, for the third time, attacked me in the *Quarterly Journal of Veterinary Science in India*, January, 1888, for writing on the subject of Surra, and has raised many personal issues against myself, which I beg to consider, by your kind permission, through the medium of your journal.

Figuratively or literally, personal grievance and personal attacks cannot constitute a symbol of science, although Mr. Steel thinks differently. Discussions regarding the science of disease are no more a personal question than discussions regarding any other science. I would much rather that we avoided personalities in our consideration of this disease. Upon certain personal issues, therefore, that have been raised in Mr. Steel's paper we do not intend to enter. I have endeavoured elsewhere to correct one or two of the errors which have naturally grown out of this habit of abuse introduced into our discussions on scientific questions, which generally owe their origin to an incomplete acquaintance with the facts as actually stated by the writer, or to prejudice.

But we ought to refer to one view in which this matter has been presented, for the sake of protesting against it. An attempt has been made to introduce Professor Zschokke's name into the discussion (*The Quarterly*, October, 1887), and to make his views on the subject of Pernicious Anæmia in animals into a national question. It has been further stated that my views are simply those of Professor Zschokke, with an unavoidable addition; and my paper on "Surra" has been made the occasion of taunting me with our non-recognition of that author's writings on Pernicious Anæmia. There is a grave misunderstanding here. As far as I am aware Professor Zschokke never wrote on *Surra* being the same disease as Pernicious Anæmia; but what he wrote was this, that Pernicious Anæmia was a very common affection in the horse in Europe; and I have simply endeavoured to show that "Surra" is the same disease seen in India, although it was not recognised as such before my articles appeared on the subject.

It has been suggested by Mr. Steel that we have borrowed our views from Professor Zschokke's article on Pernicious Anæmia. We may refer our readers to the literature of the subject, given as a frontispiece in our

"Monograph on Surra, or Pernicious Anæmia in the Lower Animals," lately published. It will be seen that Professor Zschokke was *one* of the first veterinary authors, though not *the* first, who described this disease in Europe. We have therefore freely quoted from his work whenever we found this author's views in agreement with our own.

In reference to dates, while we realise that in our first article on Surra we appeared to give the date as 1885, through a printer's error, it is clear that Mr. Steel could not have even read Professor Zschokke's article in question, or else he would not give *dates* in favour of his argument (*The Quarterly*, October, 1887). The date of Professor Zschokke's first publication is 1883, and not 1885, as stated by Mr. Steel; yet Mr. Steel insists on dates being given in favour of his argument. He says (*The Quarterly*, January, 1888): "Our author has failed entirely to inform us that Evans has two years priority to Zschokke in the records of *this disease* (?), both as regards description of the *disorder* (?) and of the parasite found in the blood." But is there not some error of statement here? Dr. Evans described a disease called "Surra" in India, and found a parasite which now goes by his name, date 1880. He suggested no new name for this disease, save "Surra."

2. Mr. Steel next wrote on the disease, and called it Relapsing Fever, dated 1884.

3. I described the disease known as "Surra" last year (1887), and named it Pernicious Anæmia.

4. Megnin, Zschokke, Johne, Imminger, then Fröhner, and many others had described *a* disease of the horse in Europe which they called Pernicious Anæmia. Who called *Surra* Pernicious Anæmia does not appear clear in Mr. Steel's attacks against myself.

Mr. Steel goes on to say that "Veterinary Surgeon Steel's report on Surra has failed to obtain a proper hearing"! Why does Mr. Steel ignore the fact of Pernicious Anæmia having been suggested for "Surra" by the writer?

Mr. Steel says he is "willing enough to admit that progressive Pernicious Anæmia is a symptom of Relapsing Fever (Surra) of the horse"; but we must add that it is not only a symptom of Surra, but that *Surra is actually Pernicious Anæmia.* We should refer Mr. Steel for our reasons for considering it so to my "Monograph on Surra, or Pernicious Anæmia" above alluded to, and to my article on that disease lately published in the VETERINARY JOURNAL.

Not content with his criticisms of my paper on Surra, Mr. Steel next directs his attacks towards my report on an outbreak of Anthrax I was deputed to investigate in Meerut during 1886-7. He concludes that the "evidence tends to support the view that Surra *was* present, and Anthrax also may have been." My investigations above-mentioned led me to report that the evidence supported the view that Anthrax *was* present, and Surra may have been before I arrived there, as I only reported on the cases actually seen by me, and not on what Mr. Steel might have seen. We are told that we have "no clear ideas on the differences between remissions and relapses." We protest against such arguments being presented as *reasons* in favour of any opinions.

I daresay the somewhat oddly-worded scoldings in which Mr. Steel indulges are well deserved, and I have no doubt I shall duly profit by them. But they are none the less to be regretted, because they leave practically no room for rational discussion of the material parts of my subject. It may be hoped, however, that the petty jealousies which have been aroused will not be gratified, and that the ungenerous attacks by Mr. Steel may not find many imitators.

There is no doubt that inquiry will most wonderfully modify prevalent views regarding the subject of Surra. In the future, when the best minds

of the profession turn to the subject, many points dim through non-representation or wrong representation will appear in their full light. Every veterinary surgeon interested in the subject of Surra and its pathology will rejoice to see an unsparing examination of the question, What *is* Surra, and what remedies are most likely to cure it? Mr. Steel would answer me by introducing personalities into the question. We may only refer to Mr. Steel's attempt to mix up my papers on Anthrax with those on Surra, and the latter with a paper I some time ago forwarded to the *Veterinarian* on "The Veterinary Profession," to show the relevancy of Mr. Steel's arguments. We have, however, got one definite reply from Mr. Steel, notwithstanding our differences of opinion, which I will give here. He says: "Mr. Burke *thinks* that Surra is Pernicious Anæmia, but has nowhere established this view, which is open to very serious objections." It is for the profession to judge now, on the evidences brought forward by Mr. Steel and myself severally, whether the disease known as "Surra" in India is Relapsing Fever or Pernicious Anæmia of the horse. It is clear Mr. Steel does not consider this disease (Surra) to be Pernicious Anæmia of the horse, and I do; and my reasons for considering it this disease I have already described at length in a recent number of the VETERINARY JOURNAL, to which I may refer my readers.

We may point out the main differences that exist between Mr. Steel and myself on the subject of Surra. Mr. Steel suggests Relapsing Fever, and we have suggested Pernicious Anæmia. The only argument Mr. Steel brings forward for saying the disease is *not* Pernicious Anæmia, is that female animals are not more subject to it than males. While among the foremost reasons we have suggested against this disease being Relapsing Fever are these:—

1. That in Relapsing Fever there is seldom more than two or more relapses, usually only one; whereas in Surra there are usually an unlimited number of relapses noted.

2. The fatality in Relapsing Fever is very slight; whereas Surra is a disease which is "invariably fatal" in its results.

3. Considering the relative difference in the number of male and female animals in the service to be in a very marked degree in favour of the males, and that Mr. Steel's chief experience was with transport mules in Burmah, we cannot place much reliance on statistical evidence such as Mr. Steel has brought forward in favour of his suggestion.

4. The clinical history of Surra in general is that of Pernicious Anæmia. Mr. Steel may say there are differences; but, to use a favourite expression of his, and with which we concur, "What appears in man may not in the lower animals, and *vice-versâ*" (*The Quarterly*, January, 1888). And if there be any differences, what they are we have yet to be informed; and whether these differences are greater than those we have seen in the case of the Relapsing Fever hypothesis. What we should like to know, is whether "Surra" can be identified with any other disease with as few differences, if any, as it can with Pernicious Anæmia suggested by ourselves.

Jubbulpore, *February 8th*, 1888. R. W. BURKE, A.V.D.

THE PREVENTION OF ACCIDENTS BY CARRIAGES.

We are requested to publish the following:—Having noticed how frequently fatal and severe accidents occur through persons being run over in the streets, and noticing also that on the ordinary tramwar car, each wheel is fitted with a guard, it strikes one's attention as being very sensible, and likely to prevent fatal damage to any person falling before the wheels of the car, as it would

keep him from under them until the car was stopped, or else throw him out of the way.

Now could not some simple wheelguard be adopted on all vehicles? Say an iron bar similar to that which holds the step, projecting downward in front of each wheel, so that any person falling before it would be caught and kept from under them; the ordinary step might be affixed to it. The wheelguards on the tramcars seem to answer excellently, and effectually protect any horse which happens to fall down from being hurt by the wheels, and they would no doubt do the same to human beings.

NOTICE.

In order to ensure early insertion in the JOURNAL, it is requested that Secretaries of Veterinary Societies will condense their reports as much as possible, omitting all superfluous matter and minor details, so that space may be economised advantageously.

A CORRECTION.

In the obituary list for February, the name of "P. E. Carter" was given instead of "Richard Carter."

TO ENQUIRERS.

MANCHESTER.—Your first question we cannot answer, but the result must depend upon circumstances. 2. Sir Henry Simpson was knighted because he was Mayor of Windsor during Her Majesty's jubilee year, and not because he was in any way connected with the veterinary profession. The distinction conferred upon him is an evidence that being a member of our profession is no bar to civic honours, or even to royal recognition of civic duties well carried out.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from W. T. Moran, London; J. A. Nunn, A.V.D., Basutoland, South Africa; "Joco"; F. W. Somers, Leeds; J. Matthews, Edinburgh; J. Moran, London; Messrs. Arnold and Sons, London; E. Moore, Albany, New York; A. Hollingham, Tunbridge Wells; R. W. Burke, A.V.D., Jubbulpore; C. Gresswell, Nottingham; G. R. Dudgeon, Sunderland; A. W. Hill, London; A. Peele, Durham; A. C. Cope, London; J. Ambler, Halifax; H. Kidd, Hungerford; A. Leather, Liverpool; Professor J. Smith, Toronto; F. Raymond, A.V.D., Woolwich; F. Smith and C. Rutherford, A.V.D., Aldershot; J. Armstrong, Penrith; H. Tweedley, Glasgow; R. S. Barcham, Paston; C. Cunningham, Slateford; S. Villar, Harrow.

BOOKS AND PAMPHLETS: *R. Bartholow*, A Practical Treatise on Materia Medica and Therapeutics; *T. S. Dowse, M.D.*, Massage; *S. B. G. McKinney*, The Science and Art of Religion; Annuaire de la Société Nationale d'Agriculture de France; *J. F. Churchill, M.D.*, The Increase of Cancer in England.

JOURNALS, ETC.: *Journal of the National Agricultural Society of Victoria; Recueil de Méd. Vétérinaire; Deutsche Zeitschrift für Thiermedicin und Vergleichende Pathologie; Wochenschrift für Thierheilkunde und Viehzucht; Echo Vétérinaire; Revue Vétérinaire; American Veterinary Review; Lancet; Mark Lane Express; Live Stock Journal; Edinburgh Medical Journal; Journal de Méd. Vétérinaire; Hufschmied; Der Thierarzt; London Medical Record; American Live Stock Journal; Quarterly Journal of Veterinary Science in India.*

NEWSPAPERS: *Melbourne Daily Telegraph; Scotsman; Edinburgh Evening News; Morning Post; Lahore Civil and Military Gazette; Irish Times; Dublin Evening Telegraph.*